The RUBBER AGE

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LATE NEWS of the Industry

Crude Rubber Prices Advance Steadily As Far Eastern Output Shows Decline

PRICE quotations for crude rubber on all markets scored bullish advances since the first of the month, future deliveries on the Rubber Exchange of New York gaining a full cent during the first three weeks of May. While this rise would not be of marked importance if rubber were selling at the high levels of a few years ago, at the present depressed prices it represents a gain of nearly 18 per cent. Quotations on the New York outside market, which opened the month at 6 cents a pound, had been pushed up to 6⅞ cents by May 19.

The May delivery on the Rubber Exchange No. 1 Standard Contract moved forward from 5.78 cents on April 29 to 6.80 cents on May 19, while rubber for the same month on the old "A" contract rose from 5.70 cents to 6.70 cents in the same period. London prices in the course of the three weeks advanced from their low of 2¾d to 3¼d.

A substantial decline in rubber production in the Far East, especially on the native growing estates of Malaya, was largely responsible for the bullish movement in the commodity. Estates of less than 100 acres in size, predominantly native, reported a production of 11,925 tons during April, compared with 18,356 tons in March. Estates of more than 100 acres in size reported production of 17,039 during the month, compared with 18,913 tons during March.

Stocks on estates at the close of the month underwent a moderate reduction, totaling 21,406 tons, compared with 22,492 tons at the end of March.

Another factor was the naming of a new Dutch committee to study the depression and make a report directly to the Netherlands Colonial Minister. A meeting of Dutch growers was specially convened by the Prime Minister on the morning of May 15, with Dr. Bernhard, Chief of the Department of Agriculture, present. Following a conference, it was decided to appoint a subcommittee for the purpose of drawing up an exhaustive report on the rubber situation for submission to the Colonial Minister. Professor de Bussey, department chief of the Amsterdam Colonial Institute, will act as president of the subcommittee, and the Colonial Department of the government will be represented by Dr. van de Waals. Other members will include Messrs. Burger, Crone and Enthouen, prominent representatives of Dutch growing interests.

J. L. Julian, president of the Rubber Exchange of New York, in a statement issued May 15 said that he was not opposed to protective steps taken with a view to saving rubber producing interests from financial disaster, but he did not favor any uneconomic measure that would prevent the stabilization of prices at a moderate level. He called attention to the fact that it takes five years for a rubber tree to bear and that over-tapping or neglect might create a temporary scarcity within the next five years that could be of considerable embarrasment to the rubber and motor car interests.

The spurt in production schedules at American tire and rubber goods factories also contributed in large measure to the rise in the price of the commodity. April consumption was the highest for any month since June, 1930, and the figure for May is expected to be appreciably higher.

Litchfield Defends Goodyear Policy In Response to Federation of Labor

SINGLED out by the executive council of the American Federation of Labor for their action in reducing wages, officials of the Goodyear Tire & Rubber Company and the B. F. Goodrich Company have been quick to reply to the charges by defending the policies of their respective companies. The statement of the labor leaders was made May 13 and asserted that "the council will urge working men and women, organized and unorganized, to resist to the fullest extent any and all attempts to reduce wages and lower American living standards."

After commenting on the stress and suffering caused by unemployment, the labor council statement said, "Notwithstanding this loss of earning power on the part of millions of working men and women, a number of employers are attempting to further reduce the purchasing power of the masses through the imposition of wage reductions. The Goodyear and Goodrich tire companies have announced substantial reductions in wages. The significant fact related to this proposed reduction in wages is that automobile and automobile tire manufacturing industries must depend upon a high purchasing power on the part of the masses of the people if a market is to be found for their products. How these industries can find a market for their products if the buying power of the people is still further lowered is difficult to understand."

On the same day P. W. Litchfield, president of the Goodyear Tire & Rubber Company, answered the charges by pointing to the return of 1,000 employes to the firm's Akron plant this month as a refutation of the contention that wage cutting will contribute toward a continuation of the unemployment situation. "The matter of getting men now unemployed back into a wage earning position is of first importance to the return of prosperity," said Mr. Litchfield. "If that should mean that men now employed should get less per hour than they received in normal times, employers no less than employes should be, and I believe are, tremendously concerned to see that reductions in rates be less than reductions in living costs.

"In the case of the rubber industry, our wages have averaged higher than in any other major industry, and the Akron units of the industry average higher than the rubber industry as a whole. Goodyear has consistently maintained wage schedules higher than are paid generally, and this policy will be maintained. We have put 1,000 employees back to work within the past month. The wages of our employes, based on the purchasing power of the dollar, are higher today than for several years."

In the absence of other officials, T. B. Farrington, general factory manager of the B. F. Goodrich Company, said, "Goodrich has made wage adjustments in keeping with the wage scale of this district. Goodrich wages are in line with the top scale of the industry."

The pay reduction that drew the attack of the American Federation of Labor was announced by Goodyear on April 3 and by Goodrich on April 4. The readjustment and reclassification then made was estimated to have lowered the pay checks of 13,000 Goodyear employes from 5 to 20 per cent. Clifford Slusser, vice-president and factory manager, declared the readjustment necessary to bring Akron industry on an even basis with average industry throughout the nation. It was pointed out that Goodyear wage scales averaged 79 cents per hour as against 63 cents for the rubber industry in general and 58 cents for all industries.

When the Goodrich reduction followed, T. G. Graham, vice-president of that company, stated, "It is a fundamental labor policy of the Goodrich company to pay wages in line with the current wages in communities in which its plants are located and with proper consideration to competitive manufacturing costs."

Plan Symposium on Abrasion Testing For Meeting of A. S. T. M. Next Month

MEMBERS of the American Society for Testing Materials will assemble for their 34th annual meeting at the Stevens Hotel, Chicago, Ill., on June 22. A program of committee meetings, special sessions and recreation events will occupy the time of the members until June 26, with papers and discussions relating to the rubber manufacturing industry scheduled during the week.

The opening day is set aside for registration and committee meetings, while the first actual session is scheduled for the morning of Tuesday, June 23, at which time there will be presented reports of administrative committees and discussions of nomenclature and testing. This session will close with a paper by R. L. Templin and R. G. Sturm on "Methods for Determining the Physical Properties of Rubber Compounds." This paper will describe the apparatus and technique developed for determining the physical properties of rubber compounds having moduli of elasticity ranging from 500 to 50,000 lb. per sq. in., such as moduli of elasticity in tension and compression in three principal directions, Poisson's ratio, permanent set, elastic hysteresis, rate of creep or time yield, specific gravity, coefficient of thermal expansion and effects of water absorption. The first two properties were determined for a large number of rubber compounds, while a complete set of determinations was made for only one final compound which is being used in model studies on statically indeterminate structures, particularly arch dams.

The fifth session of the convention, starting at 8 P. M. on June 23, will be devoted to rubber and textiles. H. J. Ball, chairman of Committee D-13 on Textile Materials will report new specifications and test methods for enameling duck for the tire industry and revisions in specifications for chafer tire fabrics. W. B. Wiegand, chairman of Committee D-11 on Rubber Products, will report progress on subcommittee activities and announce the organization of a new subcommittee on dynamic fatigue testing. He will also present new tentative specifications for rubber pump valves to supersede the standard specifications and will recommend advancement to standard of tentative specifications for rubber insulating tape. He will offer revisions in specifications for insulated wire and cable, for steam hose, in methods of chemical analysis and in the standard methods of testing rubber products.

Papers will then be read in the symposium on abrasion testing of rubber. These will include discussions by Arthur W. Carpenter and Z. E. Sargisson on their "Study of a Test for Tear Resistance of Vulcanized Rubber Compounds"; by J. L. Tronson and Arthur W. Carpenter on "Abrasion Tests of Vulcanized Rubber Compounds Using an Angle Abrasion Machine"; by H. A. Depew, S. T. Hammond and E. G. Snyder on "A Device for Measuring the Work Done in Punching a Small Rubber Cylinder from a Test Sheet"; by W. E. Glancy on "Abrasion Testing of Rubber with Bureau of Standards Type Machine"; and by C. A. Klaman on "Comparative Tests on Four Abrasion Machines."

The meeting of the society will be featured this year by an exhibit of testing apparatus and machines. These will be displayed in the exhibition hall of the Stevens Hotel and will include many new developments of interest to rubber technologists.

March Shipments of 4,121,531 Casings Are the Highest Since September, 1930

SHIPMENTS of pneumatic casings for the month of March amounted to 4,121,531 casings, the highest shipments for one month since September, 1930, according to statistics released by the Rubber Manufacturers Association. March shipments show an increase of 21.2 per cent over February this year, the seasonal increase being 23.6 per cent.

This organization reports production of pneumatic casings for March to be 4,662,57 units, an increase of 17.0 per cent over February this year, although 4.1 per cent below March a year ago.

Pneumatic casings on hand March 31st amounted to 10,014,490 casings an increase of 5.0 per cent over the February figure of 9,535,650 casings, but 20 per cent below March 31, 1930.

Inner tube shipments again fell below production in March. In that month, there were 4,449,555 inner tubes produced and 3,789,099 tubes shipped, leaving a stock in manufacturers' hands of 10,474,968 tubes. This compares with inventories of 9,920,966 tubes at the end of February. Solid and cushion tire shipments exceeded output for the thirteenth consecutive month, bringing stocks down to the lowest level in many years.

The tire industry is estimated to have consumed a total of 52,313,298 pounds of crude rubber and 17,551,004 pounds of cotton fabric in the manufacture of all types of tires and tubes.

The association's estimates are based on reports furnished by manufacturers who produce approximately 80 per cent of the total for the United States, but have been adjusted to represent 100 per cent in the figures quoted above.

April Consumption at 33,321 Long Tons Largest for Any Month Since June, 1930

CONSUMPTION of crude rubber by manufacturers in the United States for the month of April was the highest for any month since June, 1930, and is estimated to have been 33,321 long tons, an increase of 1.6 per cent over the March consumption of 32,788 long tons, according to statistics compiled by the Rubber Manufacturers Association.

Imports of crude rubber for April amounted to 46,648 long tons as compared with 40,338 long tons for March and 49,927 long tons for April, 1930, according to the association's own estimates.

The association estimates total domestic stocks of crude rubber on hand and in transit overland on April 30 at 228,382 long tons, an increase of 4.9 per cent over March, and 54.0 per cent over April, 1930.

Crude rubber afloat for United States ports on April 30th is estimated at 56,700 long tons as against 63,133 long tons on March 31st and 63,261 long tons on April 30th a year ago. The total of 285,082 long tons on hand and afloat marks a new peak for American visible stocks.

Tire Plants Continue Gains in Output, With All Companies Stepping Up Volume

THE general improvement in output and sales in the tire business which started with the beginning of May has continued through the month, with all leading factories showing appreciable gains. Sales and shipments during May are also believed to have been higher, although they will probably not equal the month's factory production.

Authorities in the trade estimate tire production for the week beginning May 11 for some of the leading companies to have been approximately as follows:

Goodyear	360,000	(6 days)
Goodrich	125,000	(5 days)
Firestone	137,000	(5 days)
General	36,000	(6 days)
Kelly-Springfield	35,000	(5 days)
Seiberling	28,000	(6 days)
Mansfield	20,000	(5 days)
India	16,000	(7 days)
Mohawk	6,000	(5 days)

At present there is no sign of a let-up in this increased rate of production schedules, and it is even possible that some manufacturers may further push up their factory outputs.

United States Rubber Company Reports Loss of $2,700,000 for First Quarter

THE United States Rubber Company in a preliminary statement reports a loss for the three months ended March 31, 1931, of approximately $2,700,000. No comparable figures are available from previous years, as the company has not in the past issued quarterly financial reports.

Disappointing sales in all divisions except the tire department handicapped the company during the first quarter and were mainly responsible for the deficit. In addition, the company faced the necessity of further readjustments in inventory valuations on account of declines in crude rubber from about 8½ cents a pound at the beginning of the year to less than 7 cents at the end of the quarter. Heavy depreciation charges, which ran at a rate materially higher than the total of $7,347,000 charges for the year of 1930, added to the burden.

During the balance of the year the business of the United States Rubber Company should be aided by economies brought about by the merging of departments and the consolidation of the operations of the tire, mechanical goods and footwear departments. With an improvement of business in the second half of the year, which might bring the sales volume close to the total of $157,000,000 of 1930, the management hopes to end 1931 with only a moderate deficit.

Seiberling Rubber Company Reports Profit of $60,769 in Month of April

THE Seiberling Rubber Company in a special report has announced profits during the month of April of $60,769 after interest and depreciation, but before federal taxes, compared with a profit of $4,700 in March. This is the first time the company has issued such monthly reports, and there are, therefore, no comparable figures for previous years. In the fiscal year ended October 31, 1930, the company had a net loss of $1,282,098.

Since the introduction of its new "triple-tread" casing, the company has been particularly busy and its production during April totaled 110,000 tires. Its output schedule for May, June and July has been set at 120,000 units a month, or approximately 28,000 units a week. There were rumors in Cleveland Stock Exchange circles to the effect that the Barberton firm had obtained a large government order, which originally had been slated to go to one of the larger tire manufacturing firms of the country.

The stock of the Seiberling Rubber Company has been acting sensationally in the past fortnight, considering the general bearish conditions of the market. The common shares rose from the year's low of 4⅝ to 7⅝ by May 5 and in the next few days shot up to 10½, closing on May 19 two points lower. The preferred stock had risen from a low of 32 to a new high of 50, with an asking price at the present time of 70.

National Tire Dealers' Association To Hold Annual Meeting in Detroit

FOLLOWING a recent meeting of the directors of the National Tire Dealers' Association, it was announced that the next annual convention will be held at Detroit, Mich. The sessions will be conducted on November 16, 17 and 18 and will be accompanied by the usual exhibition of tire repair equipment and other accessories.

A joint conference between the dealer representatives and executives of a group of tire manufacturing companies was a feature of the recent directors' session, which was held at Cleveland, O. The meeting also considered developments in the organization since the convention in Chicago last November and the work accomplished by Norval P. Trimborn, the new secretary-manager, in forming local groups through the middle west. Mr. Trimborn is now continuing his campaign of organization through the southern states.

Detroit was selected as the convention city after the decision of the National Tire Dealers' Association officials not to hold these meetings in such large centres as New York and Chicago in the future. It was considered that Detroit, being centrally located, will be easy for most of the membership to reach and as the centre of the motor industry will be interesting for dealers to visit.

(Other news of the industry will be found on Pages 179-184)

NEW YORK *and* CHICAGO Rubber Chemists Hold Meetings

Both Meetings Are Well Attended—Both Groups Establish Permanent Headquarters—Chicago Group Elects L. J. D. Healy, Chairman and Other Officers

THE final spring meeting of the New York Group of the Rubber Division, American Chemical Society, was held on the evening of May 20 in the club rooms of the Building Trades Employers Association, New York City. Nearly 125 members and guests were present for the dinner and the presentation of the technical paper of the evening.

The entertainment program featured Roscoe M. Gage, well known chemist of the Fisk Rubber Company, in several well rendered and enthusiastically received numbers on the mandolin and "Professor" Al Baker, popular entertainer, who delivered a talk on current topics and followed it with a few well executed feats of magic and a ventriloquist act. "Professor" Baker was introduced by H. Walter Grote, Murray Rubber Company chemist and erstwhile magician himself.

The new meeting place presented a distinct innovation in the type of quarters selected for such group meetings, offering a large library and reception hall, a billiard room and spacious dining hall. These facilities were used fully by the members of the group, and it is believed that in future all New York Rubber Group meetings will be held in the same club rooms. The next meeting has been tentatively scheduled for October 7.

The sudden illness of F. R. Davis, president of the Davis Emergency Equipment Company, prevented him from appearing to give his scheduled paper on "Rubber in Safety Appliances." The only technical paper, therefore, was presented by A. R. Kemp, of the Bell Telephone Laboratories, on "Rubber in the Telephone Industry." Mr. Kemp's paper was interestingly given with several stereopticon slides in illustration and was followed by a discussion of several important points by the members. A brief abstract of some of the subject matter treated by Mr. Kemp follows:

There are many uses of rubber in the telephone industry, the principal ones being for insulation, hard rubber parts, linesmen's gloves, vibration dampeners and rubber flooring. Conventional testing methods have been followed with good results in the telephone industry, but some original testing methods have been devised to meet problems peculiar to that field. The Scott Compression Tester, developed by the Bell Telephone Laboratories and manufactured by the Henry L. Scott Company, was described and illustrated in detail. The Geer Oven test has been found unreliable in the case of rubber insulation, but the Bierer-Davis Bomb test has given results that are satisfactory and closely comparable to natural aging. New methods for vulcanizing insulated wire were described.

Hard rubber is one of the best electrical insulators, but has two serious defects in its tendencies to flow and to oxidize. Research work, however, has succeeded in minimizing these deficiencies. Hard rubber has a unique use in the moisture-proofing of transmitters as well as offering protection against cigarette ashes and other extraneous matter. Moisture formed by the breath on a cold transmitter is resisted by a .003 in. rubber diaphragm across the telephone transmitter.

Gutta percha and balata have always been considered superior to rubber for use in deep sea cables, but new developments have improved the properties of rubber for this use. Paragutta, a new compound of rubber and purified gutta percha or balata for submarine cables, was described. A cable of this material has just been laid between Key West and Havana and has proved very successful.

The absorption of water by rubber compounds was treated at length. Compounding practice in the telephone industry follows that of other fields, but care in the selection of materials must be exercised. Reclaimed rubber is widely used in wire manufacture, although its electrical properties are not equal to those of the pure gum. Silica and hard rubber dust have been found the best fillers for underwater insulation. One of the oldest and most commonly used fillers is whiting, used together with zinc oxide. Mineral rubber is also useful, and litharge has previously been used largely but is being replaced to some extent by organic accelerators and antioxidants.

Chicago Group Meeting

THE Chicago Group, Rubber Division, A. C. S., held their annual meeting on Friday, May 8th, at the Steuben Club, Chicago, Ill. Election of officers for the year 1931-1932 was held, and the following were chosen to guide the organization: L. J. D. Healy, consulting chemist, chairman; W. H. Parker, chief chemist, Featheredge Rubber Company, vice-chairman; B. W. Lewis, Wishnick-Tumpeer, Inc., secretary-treasurer.

Two excellent papers on hard rubber were presented by H. Bluhm, consulting chemist and A. H. Voss, chief chemist, rubber division, Western Electric Company, Chicago. Mr. Bluhm described in his paper the various ingredients used in compounding hard rubber and the value of these materials. He also described the effect of various grades of rubber. There was considerable discussion on the paper as to whether soft rubbers containing an excess of sulphur could be classified as hard rubber. There was also some discussion as to the best methods of making hard rubber adhere to metal and also the best mold lubricant to use.

Mr. Voss' paper dealt largely with the deteriorating effects on hard rubber, with relation to their insulating properties. He explained in his paper that there is yet considerable work to be done with hard rubber in order to improve its dielectric strength. Many questions were asked in the discussion which followed concerning the comparative insulating values of hard rubber and synthetic resins.

There was a large attendance at this meeting and entertainment during the dinner hour was furnished by the "Moonlight Serenaders." The Chicago Group has made arrangements to hold their meetings at the Steuben Club in the future. Members of the Group who come from points out of Chicago to attend the meetings can stay in the club at rates prevailing in the regular hotels. Since all these rooms are above the thirty-eighth floor, members attending the Chicago meetings are assured of excellent accommodations at all times. Elaborate plans are being made for the Fall meeting and those who wish to receive notices should send their name and address to the secretary, at 365 East Illinois Street, Chicago, Ill.

Rubber Factory Equipment Shown at CHEMICAL EXPOSITION

Thirteenth Exhibit of Chemical Industries at Grand Central Palace Held Much of Interest to Rubber Chemists and Plant Engineers

THE Thirteenth Exposition of Chemical Industries, held at the Grand Central Palace, New York City, the week of May 4-9, surpassed any of the preceding shows in the number of exhibitors and public attendance. It also offered more features of special interests to the rubber industry than on previous occasions. The exhibits covered a wide field of not only chemical products but machinery and equipment pertinent to the chemical side of various industries. The exposition thus has become what might be considered as a clearing house where chemists and plant engineers could inspect and compare the various makes of those products or materials in which they were interested.

General View Of The First Floor Of The 13th Exposition Of The Chemical Industries

Of particular interest in the Exposition was the display of a sample of synthetic rubber in the booth of the American Chemical Society, made from butadiene, separated from cracked gasoline.

A description of the exhibits of the rubber manufacturers at the exposition was published in the previous issue of THE RUBBER AGE. A description of the displays made by the various suppliers of machinery and equipment to the rubber industry follows:

BAKER PERKINS COMPANY, Inc., Saginaw, Mich.—Displayed a new mixer for aqueous rubber dispersions, a new laboratory rubber masticator and numerous types of washers used in rubber plants.

BECKER, MOORE AND COMPANY, Inc., North Tonawanda, N. Y.—Exhibited wood flour used as filler in various rubber compositions and particularly in battery boxes. It comes in various standardized grades, grades ECT and R being especially adaptable in the rubber industry. Articles made of rubber composition were also shown.

BLAW-KNOX COMPANY, Pittsburgh, Pa.—Exhibited their devulcanizers and large turbine mixers.

BRISTOL COMPANY, Waterbury, Conn.—Showed a wide range of recording and automatic control instruments, including indicating pressure gages, recording thermometers, recording pyrometers and control equipment for temperature, pressure and humidity with automatic features.

BROWN INSTRUMENT COMPANY, Philadelphia, Pa.—Also exhibited a complete range of control instruments, including recording gages, pyrometers, flow-meters, resistance thermometers, high pressure manometers, with automatic features.

BUFFALO FOUNDRY AND MACHINE COMPANY, Buffalo, N. Y.—Featured a double drum dryer, vulcanizers and evaporators.

CANDLER EQUIPMENT CORPORATION, New York City, N. Y.—Displayed a large type of drying machine especially suitable for reclaimed rubber manufacture.

CARPENTER CONTAINER COMPANY, Brooklyn, N. Y.—Showed their fibre drums, suitable for shipping liquid latex, and various other types of containers.

FRED S. CARVER, New York City, N. Y.—Exhibited the Carver laboratory press and other hydraulically operated laboratory equipment.

CELITE PRODUCTS COMPANY, New York City, N. Y.—Displayed their Celite fillers for use in the manufacture of rubber composition articles.

CHEMICAL RUBBER COMPANY, Cleveland, O.—Showed labora-

tory supplies of all kinds suitable for rubber factory and research laboratories.

Cooper-Hewitt Electric Company, Hoboken, N. J.—Exhibited types of all classes of industrial lighting systems, particularly featuring the Neon Glow lamp.

J. H. Day Company, Cincinnati, O.—Displayed special laboratory equipment, featuring a rubber lined mixer, with interchangeable agitators. Midget three-roll mills and Mogul type mixers were also shown.

J. P. Devine Manufacturing Company, Mt. Vernon, Ill.—Displayed new high efficiency rotary vacuum pumps and other refinery equipment.

Dorr Company, New York City, N. Y.—Exhibited various types of classifiers, thickeners and agitators. Also showed other types of industrial equipment, lined with Vulcalock rubber process, of which they are licensees of the B. F. Goodrich Company.

Emery Industries, Inc., Cincinnati, O.—Showed their brands of stearic and oleic acids, featuring the new form of flake stearic acid, which is particularly suitable for the rubber industry.

Dryers and Filters

Filtration Engineers, Inc., Newark, N. J.—Exhibited filters and drum dryer units, with photographs of their installation in the Boston Woven Hose and Rubber Company.

Foxboro Company, Foxboro, Mass.—Displayed recording, indictating and control instruments, featuring a new stabilizer and flow-meter.

Freas Thermo-Electric Company, Irvington, N. J.—Featured their new controlled-heat, electric, laboratory ovens with horizontal-flow forced-air circulation.

Kent Machine Works, Inc., Brooklyn, N. Y.—Exhibited roller, mixing and grinding mills. Both large and laboratory sizes were shown.

Kay-Fries Chemicals, Inc., New York City, N. Y.—Displayed a line of aromatic chemicals suitable for de-odorizing rubber compounds.

Lewis-Shepard Company, Boston, Mass.—Showed various types of materials handling units, including lift trucks, stackers, skid platforms and portable elevators.

Mixing Equipment Company, Rochester, N. Y.—Displayed a wide range of portable electric mixers, mounted with motor and propeller shafting, in both direct drive and geared types.

Oliver United Filters, Inc., New York City, N. Y.—Showed filtering equipment for reclaimed rubber plants and other uses, and displayed notice that installations had been made in the factories of the Goodyear, Philadelphia Rubber and Midwest companies.

Orville Simpson Company, Cincinnati, O.—Exhibited their Rotex Screens of various types, used in rubber compounding and in reclaiming. Also showed a heavy duty screen.

Philadelphia Gear Works, Philadelphia, Pa.—Showed a complete line of speed reducing units, gears and belt drives, including one equipped with a Gilmer rubber V-belt.

Premier Mill Corporation, Geneva, N. Y.—Featured their emulsifying, grinding and homogenizing equipment, particularly their laboratory colloid mill for rubber and similar materials.

Proctor and Schwartz, Inc., Philadelphia, Pa.—Showed large drying units, including continuous filtering and drying system and a large festoon type dryer for coated fabrics.

Quaker Oats Company, Chicago, Ill.—Showed a number of compounds prepared from Furfural and products in which Furfural was used. Its application in the rubber industry is that it is used as a base for some accelerators of vulcanization.

Laboratory Equipment

Read Machinery Company, York, Pa.—Displayed their laboratory mixers, which feature interchangeable arms of unique construction.

Reeves Pulley Company, Columbus, Ind.—Showed variable speed transmission units with new automatic electric controls.

Richardson Scale Company, Clifton, N. J.—Exhibited a new compound bin, chute and gate, of special interest in rubber compounding. Also their Convey-o-Weigh unit and weighing and sacking scale.

Robinson Manufacturing Company, Muncy, Pa.—Showed a line of pulverizers, sifters, conveyors and particularly featured their mixers, equipped with trowel blades.

Sharples Solvents Corporation, Philadelphia, Pa.—Displayed samples of amylene dichlorides,—a rubber plasticizer.

Sowers Manufarturing Company, Buffalo, N. Y.—Featured Dopp jacketed equipment for heating, cooling and mixing rubber.

Struthers-Wells Company, Warren, Pa.—Showed a line of vacuum impregnators, evaporators, mixing kettles and rotary dryers.

Turbo-Mixer Corporation, New York City, N. Y.—Displayed their Turbo-mixing machines, with propeller type blades.

W. T. Tyler Company, Cleveland, O.—Showed screening equipment used in rubber compounding for screening talc and lampblack.

Watson-Stillman Company, New York City, N. Y.—Displayed their hydraulic laboratory presses, testing presses and high pressure pumps.

Aside from the above exhibits by firms closely associated to the rubber industries as suppliers of various materials and equipment, a number of companies displayed products, made in whole or in part of rubber. The General Tank Corporation, Kearney, N. J., exhibited wooden tanks lined with Linatex, the rubber coating material of the Wilkinson Process Rubber Company; Resisto Pipe and Valve Company, Newark, N. J., showed a new laboratory pump with hard rubber pipe and fittings; Hauser-Stander Tank Company, Cincinnati, O., featured rubber-lined tanks; Quimby Pump Company, Newark, N. J., showed their Doty rubber-lined pumps; Monarch Manufacturing Works, Inc., Philadelphia, Pa., displayed a line of hard rubber spray nozzles and the United Dry Docks, Tank Division, Arlington, S. I., N. Y., showed rubber-lined tanks.

Chinese Footwear Costs

THE following resumé of conditions found to exist in the Yah Kah Hop Yee Manufactory, a representative rubber footwear manufacturer in Canton, China, as reported to the Department of Commerce by Asst. Trade Commissioner David M. Maynard, will throw an interesting light on the comparative costs of production of Oriental and American rubber footwear.

The output of this company is said to be 2,000 pairs per day, and from observations made during a visit to the plant it is believed that this figure is a reasonable one. A night shift is maintained from 7 p. m. to 11 p. m. for those who care to earn additional wages. The men working on a monthly basis are allowed two holidays per month. Machine operators receive $14 Canton currency per month for the 10-hour day, with an additional $14 if they continue on the night shift. The chief engineer receives $60 and the assistant $45 per month, Canton currency. The earnings of those on a piece work basis range between $0.25 to $0.50 per day, Canton currency.

All the machines in the shop are manufactured locally. Rubber is purchased from Singapore and chemicals from the British firm of Brunner Mond & Co. (China). They have been using American duck in their better quality shoes until recently, when the price of the imported article became so high, quoted in local currency, that the manager is now using an inferior duck made in Canton, which costs less than one-half of the American article.

Wholesale prices range from $0.60 Canton currency for the cheapest style of Chinese shoe, to $2.10 Canton currency for the most expensive shoe, a copy of a well-known American brand. Most of their output is sold locally, although they are exporting a certain amount to Java and Singapore. At the prevailing rate of exchange, about $5.50 Canton currency equals $1.00 United States currency. The manager of the plant, Li Sing Yii, was trained in Singapore, having lived there a large portion of his life. He is optimistic over the immediate future of the domestic shoe trade as the exchange situation makes imported goods prohibitive in price to the great mass of Chinese and at the same time permits local manufacturers to quote an attractive export price.

The RUBBER INDUSTRY *at the* CROSSROADS

A Comprehensive Resume of the Present Conditions Surrounding the Industry, With Observations as to the Probable Remedies for Bettering the Situation

By HOWARD WOLF

THE following abstracted article on the present deplorable position of the American rubber manufacturing industry, by a leading financial authority in rubber circles, is reprinted with the permission of THE AMERICAN MERCURY, in which publication, in the June issue, under the title "The Rubber Barons Fight to the Death," Mr. Wolf also gives a very comprehensive survey of the intimate causes behind the sad condition in which the industry finds itself and attempts to indicate the possible remedies which might be administered to relieve the situation and the probable direction into which the industry is headed if it is to survive an industrial debacle. In the last analysis his plea is for better prices, less destructive competition and greater cooperation. [Editor.]

HIGH in the ranks of American big business there is an industry showing earnings of less than 2% on total sales of $10,000,000,000 during the last decade. Its earnings on invested capital have been averaging of late less than 1% a year. It is the rubber industry, of which by far the largest subdivision is the manufacture of tires—in this motorized age almost as much of a necessity as bread, milk or wearing apparel.

Seventy per cent of the tires produced in America come from the factories of the five leading rubber companies. Only two of the five showed any profit last year. One of the two failed to cover its preferred dividend requirements and neither of them covered its common stock dividend. Of the three reporting losses, one was placed in the hands of a receiver early this year. The combined profits of the two making money but not making dividend requirements were $11,453,266. The combined losses of the three others were $33,138,088. In other words, the Big Five, taken together, lost $21,684,822 during the twelve months.

Company Mortality

The smaller companies, with one brilliant exception, present the same dismal showing offered by the Big Five. Ten years ago there were 178 of them; today there are 31, including concerns that are hovering on the edge of receivership or absorption as this is written and may have gone under between now and the time these lines are published.

Now the unquestioned leader of these smaller corporations is the General Tire & Rubber Company of Akron. This concern is the only good-sized boy in the whole rubber family whose preferred and common stock dividends have never been missed. In fact, its stockholders have received any number of extra dividends. Last year it more than covered all its dividend requirements, with an actual profit before income taxes and preferred dividends of $732,597, despite an inventory depreciation of $1,000,000 due to the low prices of cotton, rubber and finished tires. The earnings on its common equaled $6.36 a share.

The cause of the astounding losses registered by the tire companies may be told in two words—jealous rivalry.

Abolish it and the industry would not be hamstrung by: 1. Continually diminishing sales prices; 2. Continually increasing durability of product; 3. Over-production; 4. Unfavorable bulk sales contracts; 5. Lack of control over raw material prices.

Of all the experts who have held consulations over the rubber industry's forlorn condition only a few of the less statistically minded have pointed out that with domination of the business centered in Akron it should be easy for the leaders to get together on a programme.

Price Today vs Mileage

In 1931 the user of the most common standard tires paid $55.80 for 3,000 tire miles. In 1921 $41.85 for 8,000 miles, and in 1931 $12.80 for 15,000 miles. The 1913 cost for each 1,000 miles of tire was $18; the 1931 cost 80 cents. In other words the motorist today travels 22½ times as far for each dollar as he did in 1913. Department of Labor figures show that no other commodity has dropped as far in price in the past five years as have auto tires. Tires today cost only 45.7% of what they cost in 1926 (even ignoring the fact that they give greater mileage) whereas the average cost of 550 other commodities is now 77% of what it was five years ago.

Prices today are the lowest in the industry's history and the tires of today wear longer than ever before. The tire makers are thus losing money; a sample proposition. The only answer, of course, is to boost prices. But because of the senseless competition in the industry this will not be done. The same senseless competition, springing in part from over-production, results in even greater over-production. With each of the giant companies of Akron lusting to be the greatest in the world, they have built and equipped block after block of factories, dreaming in brick and glass and machinery and oblivious to all such workday incidentals as market-saturation and the laws of supply and demand.

Last year the American rubber corporations sold some 54,000,000 tires. This year the most optimistic of the moguls sees 64,000,000 being sold and the more conservative estimators set the figure at 60,000,000. If the year were a roaringly prosperous one for all business and all

industry the world over, the world market could not be more than 85,000,000. And yet the American rubber companies, operating at capacity, could turn out about 110,000,000 a year, an excess of 25,000,000 over the greatest potential world requirement. The ultimate fate of the majority of smaller companies is clearly written in the fact that the Big Five alone, operating at top speed, could supply that potential market of 85,000,000 casings.

Production at a Loss

But over-production and excessive expansion are not the only fruits of the senseless and relentless battle for the honor of turning out more tires than any other company in the world. That warfare has led the Big Three of Akron to enter into mail-order and chain-store deals which cost them millions, but which they cannot back out of without puncturing their god, "Swollen Production," and seeing him topple upon them. Here we have the reason for the "unfavorable bulk sales contracts" of our summary. Among these bulk contracts are those for supplying original equipment to the automobile manufacturers. They are among the most eagerly sought prizes of the rubber industry, but why this should be so it is hard to make out. They serve, of course, to keep up production, but only too often it is production at a loss. Additionally, there is a sort of vague notion that when the motorist gets around to replacing a tire he will buy the same brand as those that came with his car. But this is probably sheer nonsense. The average motorist will always make the best buy possible, and he doesn't give a tinker's damn whether his tires match up all around.

None the less, the tire companies are so keen for these original equipment contracts that they have progressed from selling to the auto companies at cost to selling to them below cost.

The baleful influence of such entanglements extends even further. Right now there is budding a civil war in the industry, with the factories on one side and the dealers on the other. The flies in the dealers' ointment are the mail-order houses, factory-owned retail outlets, and national accounts.

Mergers Are Inevitable

A series of mergers leading to the organization of two or three giant trusts seems to be not only inevitable but also highly desirable. If it ever comes, the American motorist will start paying with interest for all the miles he has traveled on tires bought at prices that have represented charity on the part of someone. Philanthropies are always paid for out of someone's pockets and today it is the hundreds of thousands of rubber workers and rubber company stockholders who are making possible the benefits distributed with so lavish a hand by the casing czars.

It needs no economist to tells us that the nation would be better off if the automobile driver had to pay somewhat more for his tires, and the worker, the stockholder and the dealer got better profits. The peril of the prospective gargantuan merger is that it will probably clout these people along with the tire consumer. The worker is always in for a whipsawing when a couple of companies begin to share a great industry between them, especially an industry in which the laborers are wholly unorganized, as is the case with the tire builders. Many will be thrown out of work altogether, judging from the results of previous consolidations. Those remaining in service will have steadier employment, but they will step even faster and draw no more pay, and they will be discarded at an earlier age. Even now, all of the factories are constantly experimenting in an effort to find out just how much work can be sweated out of a man. Monopoly would make this even worse. In Akron the laborer had his best break when there were many more companies than there are today.

The coming consolidations will also probably mean that stockholders in the smaller companies will lose out altogether, as did the shareowners of Mason, Swinehart, Portage, Northern and any number of other busted rubber plants that strew the Akron district. And the tire dealers, once completely at the mercy of one or two or three companies, will be on a take-it-or-leave-it spot, with the additional possibility that company-owned chain stores will completely replace them.

But will it ever be possible, without mergers, to put the industry in the way of making money?

Present Conditions Cannot Continue

The divergence in the views of the leaders of the industry shows how far apart the rubber magnates are and how hard it will be ever to bring them together. At this writing there is a recurrence of the old report of a merger between Goodyear and United States, but it remains to be seen if any more will come of it this time than in the past. The Sherman and its sister acts are being jovially winked at throughout the nation today and Uncle Sam is quite complacent, but the pure ones of the rubber industry stick chastely to the letter of the law. Or say they do. In thus failing to get together and step up prices they are paving the way for a real Rubber Trust. This trust will set tire prices at a new high level without any need to violate the prohibition of joint rate fixing. Meanwhile, it is manifestly impossible for Ol' Man Rubber to keep rollin' along under the conditions which now prevail.

Duryroid—A Rubber Paving Material

CONSIDERABLE interest in rubber paving has been stimulated by the recent announcement that the Rubber Research Institute of Malaya would conduct a series of investigations into various new inventions for the utilization of rubber for roadways.

One of the latest ideas advanced in this connection is the invention of R. Dury, of Kuala Kangsar, F. M. S., who has patented a preparation, which he calls Duryoid, composed mainly of rubber, which he claims can be used for road paving in the same manner as asphalt. A portion of roadway at Kula Kangsar has been treated with Duryoid and is proving successful, according to the *Malayan Tin and Rubber Journal.*

Duryoid can be manufactured from any grade of rubber and the percentage of rubber used in making the composition is 70 per cent the balance, 30 per cent represents the chemical utilized in the process of manufacture.

The rubber is passed through steam-heated mixing rollers till it is soft and plastic and then the ingredients are added till the whole mass is thoroughly mixed. The mixture is made into thin sheet form in order to enable it to be dissolved with mineral oil.

This solution is mixed with equal proportions of Asphalt and at this stage of the process the thickness of the solution is regulated by adding Portland Cement.

The resulting fluid is now ready for use on the road. It is applied on the surface of the road in the same manner in which asphalt is spread. Fine sand is then spread on the Duryoid and the finishing touch is given by the road-roller.

It is claimed by the inventor that Duryoid provides a durable, silent and non-slipping sanitary road surface.

It is understood that this product will be considered among others which the Rubber Research Institute might examine and any others which may be evolved from their own investigations.

Can WALL STREET *Be of Assistance to the* RUBBER MANUFACTURER?

Hedging as a Means of Averting Inventory Losses on Raw Materials

By C. C. JOHNSTON

Rubber-consultant for Fenner & Beane, New York City

C. C. JOHNSTON
Who Has Recently Been Retained By a Leading Wall Street Commission House as a Rubber-Consultant

***THE question of utilizing the hedging facilities of the New York Rubber Exchange has been a moot point since the formation of the Exchange five years ago. Although certain manufacturing interests have hedged rubber purchases to good advantage there has been as yet no general participation on the part of the rubber manufacturing industry. In forming an association with one of the recognized authorities in the crude rubber field, the well-known New York commission house of Fenner & Beane indicates its intention of taking constructive steps to cooperate with the rubber manufacturers as well as with the rubber trade.*—Editor's Note.**

SINCE the Rubber Exchange of New York has been formed strenuous steps have been taken to persuade the rubber manufacturer to hedge his rubber purchases on the Exchange. Judged solely by the volume of manufacturing hedges on the Exchange, and aside from any comparison with the volume of similar hedges on other commodity exchanges, these persuasive efforts have not persuaded. Perhaps the manufacturer desires to make up his own mind on the subject (as the New York, London, Liverpool, Amsterdam and Singapore traders have done). There is no wisdom in trying to force a horse to drink, likewise there should be no necessity of providing a convincing argument as to why the manufacturers should hedge their purchases of raw materials. I recently had a conversation with a friend contemplating the acceptance of a directorship on the board of a rubber manufacturing concern. The following queries were his, not mine:

> "Why should rubber manufacturers, year after year, have to suffer severe losses occasioned largely by inventory write-downs?"
>
> "Is there not any place where their cotton and rubber purchases can be hedged?"

Such queries are indicative of questions in the minds of more than one rubber manufacturing director and particularly so in the instance of directors who are bringing a fresh viewpoint to the industry from successful endeavors in other industrial fields.

Looking at the questions from the standpoint of the individual or individuals directly concerned with the purchasing of raw materials, the hedging of rubber purchases is not so simply answered as it might seem. Not only, for example, do the differentials between grades vary more irregularly at times than can be logically expected, but there is also an irregular variance in the differentials maintained between various positions, depending upon the volume of preceding sales and purchases and upon other varying factors. The manufacturer primarily concerned with turning raw materials into manufactured goods and selling these goods at a profit cannot be expected to be in continuous intimate contact with the commodity markets although doubtlessly in this regard the American purchasing agent is particularly alert.

There is, however, always a need for more unprejudiced, accurate information, i.e. concrete facts, rather than theories, and opinions based on theories. The expert bridge-builder is not indicating his own lack of information because he confers with a consulting engineer and a similar procedure on the part of expert physicians, lawyers, chemists, etc., only indicates an application of the old adage to the effect that two heads are better than one. A consultation with a recognized establishment that has nothing to sell or buy but that is in intimate contact with the various rubber markets and exchanges here and abroad, solely as commission agents, at least gives the purchasing agent an unprejudiced viewpoint.

Hedging as Insurance

If the rubber industry is going to keep step with the changes taking place in manufacturing fields throughout the world, it is going to progress to the point where it will be dependent for its profits not upon the enhancement of the value of raw materials in its warehouses but rather upon the increment of value that has been added to the commodity by the manufacturing process. Insurance against the loss of this increment of value is secured by selling the manufactured goods at a price fair to buyer and seller, but such profits are not clinched until the raw materials purchased have been hedged against a possible decline.

DEALERS' STOCKS OF TIRES BY STATES
April 1, 1930

	Total Casings			*High Pressure*			*Inner Tubes*	
	No. of Dealers Report-ing	*No. of Tires on Hand*	*Ave. No. per Dealer*	*No. of Dealers Report-ing*	*No. of Tires on Hand*	*No. of Dealers Report-ing*	*No. of Tires on Hand*	*Ave. No. per Dealer*
New England								
Maine ..	400	24,381	61.0	277	4,306	397	31,149	78.5
N. H. ..	208	14,659	70.5	162	2,444	212	19,508	92.0
Vt.	202	11,197	55.4	138	1,854	203	14,959	73.7
Mass. ..	723	60,932	84.3	478	7,022	733	76,183	103.9
R. I.	122	8,883	72.8	87	1,214	122	15,118	123.9
Conn. ..	295	20,792	70.5	187	2,305	297	25,920	87.3
Total..	1,950	140,844	72.2	1,329	19,145	1,964	182,837	93.1
Middle Atlantic								
N. Y. ..	1,845	216,319	117.2	1,311	24,556	1,832	271,825	148.4
N. J.	667	50,463	75.7	445	5,924	677	72,014	106.4
Penn. ..	2,334	148,577	63.7	1,540	21,140	2,314	187,735	81.1
Total..	4,846	415,359	85.7	3,296	51,620	4,823	531,574	110.2
East North Central								
Ohio	1,590	123,841	77.9	1,098	17,001	1,599	158,209	98.9
Ind.	852	68,086	79.9	640	9,273	860	96,881	112.7
Ill.	1,455	125,816	86.5	1,109	17,220	1,455	166,320	114.3
Mich. ..	1,167	84,401	72.3	828	10,498	1,187	121,826	102.6
Wis.	1,080	74,572	69.0	864	12,604	1,077	101,242	94.0
Total..	6,144	476,716	77.6	4,539	66,596	6,178	644,478	104.3
West North Central								
Minn. ..	926	84,585	91.3	726	12,223	932	116,430	124.9
Iowa	943	57,727	61.2	777	10,837	935	85,518	91.5
Miss.	918	77,465	84.4	768	14,170	907	101,005	111.4
N. D. ..	458	22,440	49.0	356	4,390	464	37,496	80.8
S. D.	394	20,380	51.7	317	3,497	397	34,092	85.9
Neb.	497	32,913	66.2	398	5.932	494	51,043	103.3
Kan.	808	62,830	77.8	659	10,000	813	91,940	113.1
Total..	4,944	358,340	72.5	3,941	61,049	4,942	517,524	104.7
South Atlantic								
Del.	62	4,022	64.9	48	731	58	5,719	98.6
Md.	365	24,076	66.0	243	4,134	362	34,109	94.2
Dis. Col.	59	14,480	245.4	38	1,223	59	19,503	330.6
Va.	737	35,972	48.8	464	5,938	739	52,376	70.9
W. Va...	437	26,002	59.5	280	4,032	438	39,216	89.5
N. Car.	443	32,485	73.3	318	5,904	445	46,056	103.5
S. Car...	245	13,382	54.6	164	2,208	252	20,557	81.6
Ga.	350	25,353	72.4	272	4,288	368	39,438	107.2
Fla.	273	26,922	98.6	206	3,834	267	33,999	127.3
Total..	2,971	202,694	68.2	2,033	32,292	2,988	290,973	97.4
East South Central								
Ky.	386	24,968	64.7	277	3,833	394	39,916	101.3
Tenn. ..	327	29,572	90.4	256	4,786	336	44,552	132.6
Ala.	286	20,289	70.9	210	3,478	291	30,860	106.0
Miss.	327	14,729	45.0	245	2,758	330	24,651	74.7
Total..	1,326	89,558	67.5	988	14,855	1,351	139,979	103.6
West South Central								
Ark.	309	17,171	55.6	227	2,832	310	28,477	91.9
La.	271	20,054	74.0	196	4,268	273	31,309	114.7
Okla.	476	48,481	101,9	379	6,745	477	67,501	141.5
Tex.	1,341	98,416	73.4	1,069	17,047	1,389	158,862	114.4
Total..	2,397	184,122	76.8	1,871	30,892	2,449	286,149	116.8
Mountain								
Mont. ..	304	23,630	77.7	238	3,183	308	33,291	108.1
Idaho	194	14,126	72.8	157	1,960	200	18,542	92.7
Wyo.	143	9,715	67.9	108	1,315	139	13,883	99.9
Colo.	408	34,031	83.4	319	5,877	414	47,421	114.5
N. M. ..	154	7,781	50.5	112	1,038	152	12,245	80.6
Ariz.	151	12,850	85.1	111	1,824	152	15,901	104.6
Utah	178	10,028	56.3	118	1,570	180	12,934	71.9
Nev.	44	2,576	58.5	33	369	44	4,277	97.2
Total..	1,576	114,737	72.8	1,196	17,136	1,589	158,494	99.7
Pacific								
Wash. ..	558	74,749	134.0	433	9,533	561	86,301	153.8
Ore.	370	27,337	73.9	292	4,676	367	34,736	94.6
Cal.	1,502	158,050	105.2	1,159	22,096	1,509	188,494	124.9
Total..	2,430	260,136	107.1	1,884	36,305	2,437	309,531	127.0
Unallocated	123	7,421	60.3	73	988	125	10,147	81.2
Total United States..	28,707	2,249,927	78.4	21,150	330,878	28,846	3,071,686	106.5

NUMBER OF MAKES OF TIRES HANDLED
(PERCENTAGES OF TOTAL)

No. of Makes	*April 1st Tire Survey*						
	1925	1926	1927	1928	1929	1930	1931
One	43.2	42.0	47.9	54.2	58.5	68.3	70.0
Two	36.3	37.5	37.5	33.0	30.7	24.9	24.0
Three	14.0	14.0	10.3	9.0	7.3	4.7	4.1
Four	4.3	4.5	2.9	2.7	2.4	1.4	1.4
Five	1.5	1.5	1.0	0.8	0.8	0.5	0.3
Six	0.7	0.5	0.4	0.3	0.3	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Tire Dealers Further Fal

The Average Tire Dealer He
On April 1, According

SURVEYS of dealers' stocks of tires have been conducted by the Rubber Division of the Department of Commerce semi-annually (April 1 and October 1) since 1924. These surveys have covered the stocks held by retailers, exclusive of mail order stores, and exclusive of stocks held by large chain store organizations run by independents and by some of the leading tire manufacturing companies. Stocks held in stores of some tire companies have however been reported and included in the more recent surveys.

The increasing application of mass distribution principles to tires during the past two years has made the official surveys, covering independent retailers, less indicative than formerly of the situation they were intended to clarify, namely the quantity of tires in hands of distributors. The customary practice of trade statisticians has been to estimate the total number of tires held by independent dealers by multiplying the average stock per dealer by an estimated number of total dealers. The total number of tire dealers is not definitely known, but estimates generally have been that there were about 100,000 independent dealers in 1925-6 and that this number has since declined annually to around 75,000 in 1930. Some trade experts believe the number of independent retailers at present is about 70,000.

Since the tire-company-controlled and some other chain outlets have much higher average stocks per outlet than the independent retailers, the former method of estimating is now imperfect. In the present survey an atttempt has been made to secure statistics that will be more helpful for determining the total quantity of tires held by distributors.

Under the caption "mass distribution" as used in this report is included the distribution of tires (a) by the two principal mail order houses direct by mail or through retail stores to consumers; (b) by two supply companies merchandising special brand tires (one principally through its own stores and the other principally through retail outlets of oil companies), also by a third independent chain system; (c), and by three tire manufacturing companies through chain systems operated or controlled by the companies. Under this latter heading, reports included from two companies cover only those stores reporting stocks of over 500 casings on April 1, 1931. Reports received from firms listed above are *not* included for either 1930 or 1931, in the accompanying tables, which are believed to be closely comparable as regards types of dealers, some tire-company controlled outlets being included in this group for both dates.

The average stock of automobile casings per dealer for April, 1931, for comparable dealers, is thus shown as 78.4 against 83.0 a year previous, a decline of 4.6 casings per dealer. The total number of casings held by independents

Survey Shows n Inventories

8.4 Casings and 106.5 Tubes
inal Report of the Survey

must be estimated by assuming a certain number of active dealers for 1930 and also for 1931.

The stocks reported below are estimated to be 90 per cent complete for all mass distributors, exclusive of firms included above with independent retailers.

Mass Distributors' Stocks

	April 1, 1931, *Stocks*
Total casings	1,402,115
*High pressure casings	47,000
Inner tubes	1,547,586
Solids	854

*Incomplete figure; high pressure casings not reported separately by some mass distributors.

The number of retail outlets covered by these stocks, and the average stocks per outlet, can not be stated without danger of disclosure of activities of individual firms. The fact that one firm did not report statistics by States and that several firms did not report statistics by individual dealers makes it impossible to include these statistics in the State analyses or in the analyses of dealers by volume of stocks.

Comparable statistics for 1930 or previous years are not available, but there is reason for believing that stocks under this heading have increased during the past year enough to just about offset the indicated decline in stocks held by independent retailers. There is also reason for believing that the total number of individual retail tire outlets (combining independents and those used by mass distributors) in the United States is greater at present than it was a year ago, owing to the stocking of tires by numerous oil and gas stations which did not handle tires a year ago.

The growth of chain store systems in the distribution of oil and gas, groceries, druggists' supplies, shoes, and goods sold through 5 and 10 cent stores, has been rapid in recent years. A tire manufacturer who maintains his own retail distribution chain secures as one result a more stable predictable market. To some degree an independent chain through its retail stores offers a similar assured market to a manufacturer. Independent dealers who continue to handle the product of a single manufacturer year after year offer practically the same kind of an assured market. More and more independent dealers are handling but one make of tire, the percentage of such dealers having steadily increased from 43.2 per cent in 1925 to 70.0 per cent in 1931. Thus independent dealers appear to realize increasingly the advantages to them resulting from being connected with a single manufacturer.

An analysis by volume groups has been prepared of the reports from dealers having stocks of casings, and a comparison made to the survey of April 1, 1930. Generally speaking, this year a greater percentage of reports fell into

DEALERS' STOCKS OF AUTOMOBILE TIRES

	April 1, 1930			*April* 1, 1931		
	Number	*Dealers Reporting*	*Ave. per Dealer*	*Number*	*Dealers Reporting*	*Ave. per Dealer*
Total casings	2,550,222	30,717	83.0	2,249,927	28,707	78.4
High pressure	544,923	24,309	22.4	330,878	21,150	15.6
Inner tubes	3,637,543	30,677	118.6	3,071,686	28,846	106.5
Solids	40,829	1,436	28.4	28,193	1,296	21.8

AVERAGE STOCKS PER DEALER

	1925	1926	1927	1928	1929	1930	1931
Total casings	62.2	63.9	70.6	81.2	94.4	83.0	78.4
Balloon casings	14.8	21.9	35.5	45.7	69.1	(1)	(1)
High pressure	(1)	(1)	(1)	(1)	(1)	22.4	15.6
Inner tubes	102.1	119.6	120.9	123.4	143.5	118.6	106.5
Solids, etc.	20.1	26.6	24.7	27.0	35.0	28.4	21.8

(1) Not tabulated separately.

DEALERS CLASSIFIED BY VOLUME OF STOCK

	April 1, 1930			*April* 1, 1931		
	Number of Dealers	*Per Cent of Total Dealers*	*Number of Casings*	*Number of Dealers*	*Per Cent of Total Dealers*	*Number of Casings*
Less than 10	4,707	15.33	23,919	5,205	18.14	25,720
10-24	7,426	24.17	121,636	7,395	25.76	118,848
25-49	7,096	23.10	250,022	6,624	23.08	231,999
50-99	5,936	19.32	408,462	4,987	17.37	341,548
100-199	3,170	10.32	429,269	2,495	8.69	338,348
200-299	967	3.15	230,192	757	2.64	177,174
300-399	408	1.33	137,108	385	1.34	131,387
400-999	611	1.99	345,689	638	2.22	381,085
1,000 and over	396	1.29	603,925	221	0.76	503,818
Total	30,717	100.00	2,550,222	28,707	100.00	2,249,927

SUMMARY OF DEALERS' BUSINESS

	April 1, 1930		*April* 1, 1931	
	Number	*Per Cent of Total*	*Number*	*Per Cent of Total*
Total reports received	31,677	100.0	29,651	100.0
Sell automobiles	12,005	37.9	11,494	38.8
Sell gasoline	24,014	75.8	23,269	78.5
Sell batteries	20,232	63.9	20,350	68.6

DEALERS' STOCKS OF SOLID AND CUSHION TIRES

States	*No. of Dealers*	*No. on Hand*	*States*	*No. of Dealers*	*No. on Hand*
Alabama	19	235	Nevada	2	15
Arizona	10	63	New Hampshire	4	102
Arkansas	9	218	New Jersey	32	1,009
California	84	1,041	New Mexico	4	81
Colorado	19	250	New York	112	4,916
Connecticut	15	181	North Carolina	18	232
Delaware	5	91	North Dakota	16	374
D. C.	5	155	Ohio	71	978
Florida	10	335	Oklahoma	23	436
Georgia	21	394	Oregon	15	202
Idaho	12	98	Pennsylvania	123	1,604
Illinois	63	1,475	Rhode Island	7	1,497
Indiana	41	421	South Carolina	4	23
Iowa	36	1,210	South Dakota	14	369
Kansas	22	993	Tennessee	16	256
Kentucky	20	418	Texas	39	534
Louisiana	8	45	Utah	9	88
Maine	13	174	Vermont	6	108
Maryland	14	401	Virginia	32	300
Massachusetts	31	581	Washington	28	402
Michigan	56	1,727	West Virginia	23	264
Minnesota	29	625	Wisconsin	47	1,231
Mississippi	14	214	Wyoming	8	176
Missouri	48	1,218	Unallocated	6	57
Montana	14	186			
Nebraska	18	190	Total	1,296	28,193

the class of dealers having less than 25 casings in stock, a smaller percentage of reports falling into the classes of dealers having 25 casings or more in stock.

During the past year there has been further extension of the mass distribution principle to tire merchandising. A careful study of reports received from large distributors which did not report in 1930, and of the reports from firms which did report in 1930, indicates that a reduction in stocks held by small distributors is offset by an increase in the stocks held by large distributors, with little net change in total stocks in hands of distributors. The entry of oil companies into tire distribution has added numerous new retail outlets, offsetting any shrinkage in the number of independent dealers.

Tire Distribution in Larger Dealer's Hands

The higher "average casings per dealer" figure shown in the preliminary report of April 1, 1931, dealers stocks resulted from inclusion of stocks held in stores of large distributors, and while not strictly comparable with reports of previous years, is in line with the tendency (frequently noted in past surveys) toward concentration of tire distribution in the hands of larger dealers. The average independent dealers' establishment is becoming more and more a general automotive supply station.

Road Shock Tests

A CLOSE study of reactions developed by trucks and buses to road conditions when equipped with balloon tires, as compared with the reactions when equipped with high pressure or solid tires, is likely to bring about a change in state or federal loading limitations imposed upon trucks and buses throughout the country, according to B. J. Lemon, field engineer of the United States Rubber Company and a member of the Rubber Manufacturers' Association Committee cooperating with the Bureau of Public Roads, of the U. S. Department of Agriculture. The direct result, Mr. Lemon believes, will be an increase in the loading permitted vehicles using low-pressure tires, as these tests show conclusively that the shock to the road is greatly diminished when balloon tires are used.

Experiments conducted by the Bureau of Public Roads in conjunction with leading tire manufacturers have proved, Mr. Lemon points out, that only 15 per cent greater pavement thickness is required to support a 7½ ton balloon-tired truck than for a 7-passenger car. These experiments were conducted largely at the Aberdeen, Md., Proving Grounds on a specially prepared concrete road, and at Washington, D. C. In order to test the impact steel obstructions, 200 feet apart, were located on this road at the end of an 0.8 mile straight-away, secured in place by screws and nuts countersunk in the pavement.

These experiments showed that if cushion and solid tires were used and the truck operated at 20 miles an hour a greater thickness of slab would be necessary, averaging 31 per cent for cushion tires and 42 per cent for solid tires greater than the minimum practicable thickness required for 7-passenger automobiles.

The impact reaction after passing over a 1½-inch by 30 inch inclined plane and a 1½-inch by 12 inch rectangular obstruction in all tests was shown to be decidedly less where single balloon tires were used, with dual balloons second and high-pressure tires the greatest. In passing over the 1½-inch by 12-inch obstruction using 7-inch dual high pressure tires with 100 pounds pressure, the impact increased up to 30-miles an hour until it reached 30,000 pounds and remained stationary up to 50 miles an hour. With 9.00-inch dual balloon tires, using 61 pounds per square inch pressure, the impact rose to 24,000 pounds and at 20 miles an hour and dropped off at 30 miles an hour until it reached 20,000 pounds at 50 miles an hour. But using 12-inch single balloons with 82 pounds pressure the impact reaction rose to only 21,000 pounds at 20 miles an hour and dropped off sharply to 17,000 at 50 miles an hour, showing the effect upon the road of balloon tires of low pressure to be less than with other types.

Czechoslovak Rubber Cartel

AFTER long negotiations, six of the nine Czechoslovak firms engaged in the manufacture of rubber goods, have united under a cartel agreement. These firms are: The Prague Rubber Company, Prague-Vysocany; Matador Rubber Factory in Bratislava; Optimit, Odrau; Veritas A. G., Grottau; Joseph Kudrnac Sohn, Nachod and J. Hakauf & Sons, Hradex Kyralove. T. & A. Bata, Zlin, and Fr. Stepanek Company, Hostivar, manufacturers of rubber overshoes and boots, are the only important firms not included in the cartel.

At present the agreement regulates quotas and prices of technical rubber supplies and heels, but it is expected that it will be extended within a short time to cover other lines. About 70,000,000 crowns (approximately $2,100,000) of technical rubber supplies and heels are produced annually in Czechoslovakia.

The control of the cartel will be in the hands of the Zivnostenska and the Czechoslovak Union Bank, with Dr. F. Stern, a Prague lawyer, as referee. Director Goldschmidt of the Semperit Company, Vienna, is primarily responsibe for smoothing out the difficulties and bringing the negotiations to a successful conclusion.

Estates Out of Production in D. E. I.

THE extent to which tapping operations have been stopped in the Dutch East Indies and British Malaya has been difficult to determine but according to the detailed figures of Dutch estate production published in the *Korte Berichten* for February 27, 1931, there were twenty-four rubber estates in the Netherland East Indies which had definitely stopped tapping. Their total productive capacity is estimated at 1,068 tons annually. In addition to these, there were thirty estates which produced no rubber in December, although they are not listed as having definitely closed down. The total productive capacity of these is 2,552 tons annually. Accordingly, in the month of December a total of fifty-four estates, with an annual capacity of 3,620 tons and a monthly capacity of something over 300 tons, were out of production.

Cellophane Wrappings on Tires

A NEW method of wrapping inner tubes has been adopted by the manufacturers of the Michelin tires in France, according to reports from Paris. This company is now using bags consisting of two layers of cellophane with a sheet of fibrous paper between. They are of deep blue color with yellow label, the color scheme previously adopted by Michelin. The bags are lined, however, with red cellophane, which counteracts the effect of the ultra-violet rays, which are injurious to the rubber. The material offers resistance, especially on heavy vehicles, to wear and tear occasioned through vibration of the engine and the uneven road surface, which tend to damage the tube, while its greaseproof qualities prevent absorption of grease or oil.

French Rubber Trade in 1930

EXPORTS of rubber goods from France in 1930 decreased in value to $20,080,200 from $24,475,600 in 1929, or by about 17 per cent, according to the Department of Commerce. Almost every item on the export list manifested a decline in both volume and value, but the items most far-reaching were automobile casings including tubes, and rubber footwear, which accounted for 55 and 6 per cent, respectively, of the total value during 1930. Total volume decreased by 21 per cent.

Though the economic depression figured to a certain extent in the decreased exports, the greatest factor was keener opposition on the part of foreign competitors. In tires the United States, Canada, and the United Kingdom have given French producers stiffer competition in recent years, while in rubber footwear the most intensified rivalry has come from the northern European markets, such as Germany, Sweden, Latvia, and perhaps Soviet Russia. The markets in which France a few years ago were dominant in rubber footwear have so far not been confronted with Japanese competition. In rubber sundries and specialties Germany has been the principal competitor recently of France for the lower-priced articles, while the United States and the United Kingdom have cut into the trade of the higher-priced items.

Exports of Automobile Casings Declined

French exports of automobile casings declined from an estimated 1,478,000 units in 1929 to 1,169,880 in 1930, or by 21 per cent. France now ranks as the third largest tire supplier, after having been at one time the leading exporter of the world. The growing importance of the United States as an exporter—particularly in 1927—first relegated France into second place. During 1929 Canadian exports were increased to such an extent that France was forced to third place.

Of the miscellaneous group, the principal item is rubberized sheeting, which declined from a value of $848,050 in 1929 to $568,165 in 1930. There was an increase in exports of hard-rubber articles—from a value of $89,500 in 1929 to $105,600 in 1930. In the large item of rubber articles, not elsewhere specified, there was a decline from $2,134,200 to $1,921,500 in 1930.

In the face of a declining trade in exports of rubber goods, France is confronted with an increasing trade in imports. Such a condition demonstrates that to a certain extent foreign manufacturers are giving greater competition to the domestic producers, with the ultimate conclusion that they are reducing the consumption of French-made goods and getting a greater hold upon the local market. This is especially true in respect to tires and rubber footwear. Total imports of French rubber goods increased from $7,885,590 in 1929 to $9,602,400 in 1930.

French Export Markets

At present, if it were not for the French colonies to take the surplus of French-made tires, the position of France as a tire exporter would be somewhat negligible—or at least considerably below its present position. Discounting the colonies, Switzerland, France, and Belgium are the only foreign markets of importance at present—none of which exceed 90,000 units annually.

Algeria—actually a part of France proper—took in 1930 the greatest number of casings or 231,700 units, but a decrease of 25 per cent as compared with 1929. French Indo-China was a poor second with 99,720—a slight decline from 1929.

Switzerland was the first foreign market, taking 80,550 units in 1930 against 103,130 in 1929. France has been losing precipitately in this market, with Italy as its principal competitor. On the other hand, the greatest portion of the tires exported from Italy originates in the Italian-Michelin factory, so "Michelin" remains apparently the most popular tire on the Swiss market. Though the United States manufacturers experienced a slight reverse in 1930, Canadian and British producers increased their participation and gave keener competition to French-Italian Michelin.

Spain, the fourth market, declined considerably. At one time France supplied more than 80 per cent of the total Spanish consumption, but in recent years, with increased opposition from the United States, France has been rated as the second-best supplier. Canada and the United Kingdom have also increased their share lately, but not sufficiently to exceed the second position held by France.

Exports of bicycle casings and tubes still occupy an important place in French exports—to a value of $2,512,720 in 1929 and $2,387,800 in 1930. This trade goes mostly to European markets where bicycles have not altogether lost their popularity.

Estimated Exports of French Automobile Casings

[Estimated units]

Country of destination	1928	1929	1930
Algeria	197,535	309,830	231,700
French Indo-China	88,710	101,120	99,720
Switzerland	173,420	103,130	80,550
Spain	153,075	104,750	74,600
Morocco	64,185	61,050	57,250
Belgium	137,830	62,650	50,420
Tunisia	33,925	47,090	44,660
Italy	75,825	43,240	44,320
Netherland East Indies	46,435	51,890	30,330
Other countries	841,060	593,250	456,330
Total	1,812,000	1,478,000	1,169,880

Imports of automobile casings into France increased from an estimated 259,570 units in 1929 to 430,950 in 1930, or by 66 per cent. The fact that French exports of tires continue to decrease and that imports continue to increase in the face of tariff barriers shows to a certain extent the weak position of the French tire industry.

Swiss Tire Industry

R. & E. Huber A. G., "Pallas" of Pfaeffikon, in the Canton of Zurich, is the only manufacturer of tires in Switzerland. The approximate annual output is 5,000 tires. Up to the present it has been operated largely for the benefit of the Swiss Government, and about 90 per cent of the entire output is purchased by the military and post-office departments. It is not regarded by dealers as a competitor in the general trade.

Type "K" Rims Standardized

STANDARDIZATION of single bevel demountable rim mountings, a problem which has been the subject of much discussion among bus, truck and trailer manufacturers, was effected through a solution offered by the Goodyear Tire and Rubber Company at the last annual meeting of the National Automobile Chamber of Commerce.

Two standard mountings for single bevel demountable rims have existed in the truck industry in America. The Goodyear company has manufactured a line of Type "K" rims having a single 18 degree mounting bevel, while the Firestone company has manufactured several types of rims having single 28 degree bevel mountings.

The Goodyear company, it was announced, has designed and started to manufacture a complete line of Type "K" rims having a 28 degree mounting bevel which will interchange on the same wheels with existing Firestone BO, DTI and R rims using the 28 degree single bevel mounting. This, in effect, standardizes the mountings of single bevel rims and makes possible the interchangeable use of the principal types of truck rims now manufactured in this country.

The new Goodyear rim will be known as the K-28 and will have all the distinctive and desirable features of the present Type "K."

EDITORIAL COMMENT

Rubber Paving

WITH the record huge stocks of low price rubber on hand at the present time the occasion would seem opportune to push the development of rubber paving to the limit. It is encouraging to hear that the municipal commissioners of Singapore are providing an opportunity for further experiments and a section 30 yards by 18 feet is to be laid at a cost of $200. While this appears to be a somewhat niggardly sum, it is presumed that if the tests are satisfactory more areas will be developed.

The Rubber Research Institute of Malaya is also getting into action in this connection and is conducting a series of tests on various types of rubber paving to determine which of the many proposals and inventions which have been put forward, have merit sufficient to warrant further experimentation.

The latest development in rubber paving is toward the use of liquid latex in combination with other materials, making a preparation not unlike asphalt or macadam, which might be laid down in much the same manner as those two materials. As the *Malayan Tin and Rubber Journal* puts it, if such inventions could be developed and prove satisfactory, "a wonderful avenue will be opened up and the rubber industry will enjoy a gloriously long period of prosperity to say nothing of Arabian nights for planters."

Wage Cuts

THE protests by the American Federation of Labor directed against the new wage readjustment plans recently inaugurated by the Goodyear Tire and Rubber Company and closely followed by the B. F. Goodrich Company, are worthy of serious consideration by the chief executives throughout the rubber industry. The position taken by the two rubber companies is that while wages are reduced slightly, the plan permits the taking on of more workers. Moreover in this particular instance the former wage scale in the two companies was higher than that prevailing generally throughout the industry. Criticism is not directed toward the two companies for the action they have taken, but the whole subject of wage reductions at this particular time, is one for serious thought.

The fact that the American Federation of Labor has seen fit to openly charge the banking interests of the country with breaking faith with the policies against any wage cuts, laid down at President Hoover's industrial conferences last year, and the present agitation in the press against any reductions, is sufficient evidence that curtailments in wage scales are being considered in some industrial fields.

It would be a pity if such curtailments hit the rubber workers. Their situation has not been a bright one for some time and to a great number the road has been exceedingly hard going. In the past the industry has secured a degree of loyalty from its labor that has not been surpassed in any other industrial field. The rubber manufacturers have not been harrassed with labor disputes and strikes. Labor has given them full value received. They have been found well worthy of their hire.

Of course, the present unemployment situation should be considered, and as P. W. Litchfield, president of Goodyear, says, the problem of getting men now out of work back to a wage earning position is of the first importance to the return of prosperity. But it is to be hoped that this can be accomplished without reducing wages, at least, without cutting them proportionately below the very slight reduction which has occurred in living costs.

Rubber Plantation Costs

AT THIS time of low market prices the plantation managers are exercising every means of economy to bring "all-in" costs to the lowest possible level. Such economies have resulted in bringing rubber costs to astounding low levels,—levels unheard of even a year ago. "All-in" costs of 12 cents per pound were exceedingly rare, but under the pressure of the economic situation, that figures is expected to be cut in half by at least one of the leading plantation companies.

At the annual meeting of the Dunlop Rubber Company, Sir Eric Geddes, chairman of the company stated that their plantations were producing at the lowest figure ever attained, with a record weight of rubber per acre. They have reduced their costs from 5⅛d per pound to 4.45d and expect to get this figure down to nearly 3d during the present year.

This speaks well for the direction of the company and is sound evidence of what can be accomplished by plantation management. Incidentally it further explodes the old theory of setting any arbitrary figure as a "fair" price for rubber as a basis for trading.

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Representatives in all the rubber centers of the United States, Canada, England, France, Germany and the Middle East.

The Rubber Industry's CURRENT NEWS

Financial—Personals—New Rubber Products—
Building Operations—Manufacturing—Exports

B. F. GOODRICH COMPANY RE-ELECTS ITS OFFICERS

Confidence in the directorate and officers of the B. F. Goodrich Company was expressed recently when the company's stockholders re-elected six directors whose terms expired at the annual meeting on May 6. The directorate then re-elected the company's officers.

J. D. Tew, who for three years has been head of the Goodrich Company, remains its president. He also is president of the Rubber Manufacturers Association.

Other re-elected Goodrich officers are: D. M. Goodrich, chairman of the board; C. B. Raymond, vice-chairman of the board and vice-president of the company; T. G. Graham, first vice-president; J. H. Connors, A. B. Newhall, W. A. Means, vice-presidents; S. M. Jett, secretary; V. I. Montenyohl, treasurer, and T. B. Tomkinson, comptroller.

Directors who were re-elected are: C. C. Goodrich, F. H. Mason, Wesson Seyburn, Albert A. Sprague, T. B. Tomkinson and V. I. Montenyohl.

The stockholders voted to retire 11,880 shares of preferred stock previously acquired for that purpose.

No action on stock dividends was scheduled for the meeting.

BICKETT RUBBER MOVING TO ANDERSON, INDIANA

The Bickett Rubber Products Corporation, Watertown, Wis., has purchased a factory at Anderson, Ind., and will have its equipment and offices completely moved to that location by the beginning of July. The company manufactures Tite-Grip window channel, automobile mats, step plates, stair treads, door mats, bath and sink mats, rubber heels, rubber bond grinding and polishing wheels, hones, extruded material, tubing and special molded goods.

The company will be reorganized and incorporated in Indiana, according to L. M. Bickett, vice-president and general manager. About 30 skilled workers in addition to the officials will come to Anderson, and the plant will start with approximately 60 employes.

Calco Buys Ultramarine Firm

The Calco Chemical Company, Bound Brook, N. J., a subsidiary of the American Cyanamid Company, has acquired the National Ultramarine Company of Norwood, O.

Find Kaufman's Body

Word was received on May 18 from guides searching for Mitchell B. Kaufman that the body of the missing president of the Converse Rubber Company had been found near St. Theophile, Que. Mr. Kaufman vanished on November 5 while hunting with a party of other Converse Rubber Company executives near Jackman, Me. He was president of Converse since 1928 when he helped to reorganize that company's finances and was also president of the Hodgman Rubber Company.

Voorhees Rubber Plant Sold

The sale of the Voorhees Rubber Company plant at 50 Bostwick Avenue, Jersey City, N. J., to the Fleetwood Realty Company was reported May 10. The plant is a two-story brick structure covering a plot which has a frontage of 400 feet along the avenue and a depth of 100 feet, and two vacant lots in the rear were also included in the sale. The plant is assessed at $71,000, the land being valued at $29,200 and the building $41,800.

R. & H. Elects New Officers

At the annual meeting of directors of the Roessler & Hasslacher Chemical Company, Inc., in New York City last month, W. F. Harrington was elected chairman of the board and Hector R. Carveth was named president. Other officers selected included Mortimer J. Brown, Milton Kutz and E. A. Rykenboer, vice-president; Colby Dill, vice-president and secretary; Albert Frankel, treasurer; August Heuser, assistant treasurer; M. D. Fisher, E. A. Howard and J. Carlisle Swaim, assistant secretaries.

Deny Panther Receivership

Newspaper stories connecting Guy L. Vaughan, missing bank receiver, with the Panther Rubber Manufacturing Company, Stoughton, Mass., have been denied by A. C. Webber and Julian Nelson, counsel for the rubber firm. Characterizing stories which said that Vaughan's income had been amplified by money from the rubber company as constituting "a grave injustice" to the company, they pointed out that the Panther company "has always enjoyed a very high class reputation financially." Vaughan's only connection was as counsel for the administrator of the estate of a stockholder in the company. The company itself was in no way concerned in the litigation, according to Attorneys Webber and Nelson, who declare that "the statement as to receivership and bankruptcy is wholly inaccurate."

FALLS RUBBER COMPANY SHOWS SALES INCREASE

The Falls Rubber Company, Cuyahoga Falls, O., a division of the Master Tire & Rubber Corporation, has reported an increase of 90 per cent in sales made during March over February and an increase of 120 per cent over sales in March, 1930. Preliminary figures for the month of April reveal a substantial increase both in production and sales over the March output. The concern's production now is more than 80 per cent of capacity.

New distributors have been added in Oklahoma City, Forth Worth, San Antonio, Amarillo, Brownsville and Dallas, according to F. C. Milhoff, vice-president, who recently returned from a trip through the southwest.

The company celebrated its 22nd birthday May 9 and announced a new Falls Master tire.

INDIA TIRE & RUBBER CO. REACHES PLANT CAPACITY

The India Tire & Rubber Company, Mogadore, O., has been operating during May at capacity six days a week. Additional machinery was installed early this month and has just been put in operation, making possible the sixth production increase of this plant since January. With this increase, India is now producing 14,400 tires a week, as against 12,300 at the start of the month. The previous record, established in 1925, was 10,500 casings a week.

The company reports substantial increases in truck and bus tire sales, which constitutes a major part of its business. General sales equal present production.

Bank Buys Houk Rubber Plant

The Citizens National Bank, New Philadelphia, O., bid in the buildings and realty of the Houk Rubber Company at a sheriff's sale last month at two-thirds of the $85,000 appraised value and also purchased the remaining machinery and equipment for $500. The bank is now seeking another tenant for the factory.

Vansul, Inc., in New Quarters

Vansul, Inc., manufacturers of and dealers in rubber colors, pigments and fillers, have moved to new and larger quarters at 110 Broad Street, New York City. They were formerly located at 41 Water Street.

U. S. RUBBER COMPANY TO AWARD SAFETY PRIZES

The executive committee of the United States Rubber Company has decided to vote larger cash prizes for safety records in the company's plants. The factories will be divided into two groups, the larger and the smaller, with a first, or President's prize, and a second, or General Manager's prize, in each. These prizes will be $500 and $250, respectively, for the larger, and $250 and $125 for the smaller group, the winning employes to decide how the money shall be expended.

During 1930 the United States Rubber Company, with a reduction of 9 per cent in the number of employes, showed an improvement of 54 per cent in the number of days lost due to industrial accidents and an improvement of 37 per cent in the number of lost time accidents, as compared with the figures for 1929. The severity rate dropped from 1.236 in 1929 to .645 in 1930, and the company's total accident cost in 1930 showed a reduction over the previous year of 34 per cent.

The 1930 accident contests were won by the Indianapolis plant in the larger group, with an improvement of 76 per cent, and the Rubber Regenerating Company, Mishawaka, Ind., among the smaller plants, showing an improvement of 85 per cent.

Goodyear Reduces Accidents

During the first four months of 1931, the Akron factories of the Goodyear Tire & Rubber Company reduced accidents to the extent of 17 per cent below the same period of last year. Six Goodyear subsidiary plants had a total of only five accidents during April. New Toronto, Bowmanville and Australia had none, California only one, and Gadsden and England two each. The Australian plant has operated three consecutive months without accident.

U. S. Reclaiming Safety Record

The U. S. Rubber Reclaiming Company's last lost time accident was on August 18, 1930, giving the company a record of 256 days without accident up to May 1, 1931, which the workers and officials hope to be able to stretch to a year or more. Safety Director Kerrigan lists as some of the reasons for the record strict reprimands by management for accidents, monthly inspections, good housekeeping, proper safeguards and devices, health programs, reviewing and analyzing accidents and devising means to eliminate them, weeding out of hazardous workers, safety posters and programs, hiring proper employee for each specified job, strict medical examination, employs suggestion system, plant bulletin, and monthly safety meetings.

Stewart Bolling Moves

Stewart Bolling & Company, Inc., specialists in used machinery for rubber factories, has moved to 5207 Lakewood Avenue, Cleveland, O. The firm was formerly at 1105 Chester Avenue in that city.

C. W. Steele

C. W. Steele, for 12 years manager of the experimental development department of the Miller Rubber Company, died late last month from heart disease and pneumonia at 63 years of age. Mr. Steele contributed many practical manufacturing ideas to the Miller Rubber Company, the Ohio Injector Company, the Diamond Match Company and the Firestone Tire & Rubber Company during his career.

A. T. Kingsbury

A. T. Kingsbury, a director and one of the organizers of the India Tire & Rubber Company, died in City Hospital, Akron, O., on May 6. Mr. Kingsbury, who was 73 years old, has been allied prominently with the growth of Akron for more than 50 years. He was associated for eight years with the M. O'Neill Company, leading department store, and in 1918 he organized the Mogadore Savings Bank.

Thomas J. Wetzel

Thomas Johnson Wetzel, long identified with the automobile parts business and more recently with the rubber machinery industry, died at his home in New York City on April 22 in his 64th year. Born in Dayton, O., in June, 1867, he was one of those who came over to the infant automobile industry from the bicycle business.

Mr. Wetzel was known principally as a manufacturers' selling agent, though his interests were numerous and extended in a number of different directions. He was president of the old Wetzel-Hall Company and later vice-president of the Buffalo Pressed Steel Company. As eastern representative of the Motor Wheel Corporation, he became, in due course, head of the Steel Wheel Company. For many years he was special representative of the Brown-Lipe Gear Company, and it was in that connection that he had most of his dealings with the factories.

With Edgar B. Fraser, Mr. Wetzel formed the Wetzel-Fraser Company to sell textiles, and with John P. Creamer he formed Wheels, Inc., of which he was chairman, which represents the leading wheel and brake companies in New York. With John V. Mowe he formed the Twemo Corporation, which is the sole licensee of the Fairchild patents covering the Fairchild inner tube machine and process.

In the trade since 1901, an even 30 years, Mr. Wetzel was a well known figure at all trade gatherings, serving repeatedly in association work. He acted as vice-president of the old Motor and Accessory Manufacturers Association and later as its secretary and assistant treasurer. He is survived by his widow and two daughters.

J. E. Stephenson

J. E. Stephenson, 58, manager in British Columbia since 1923 for the Goodyear Tire & Rubber Company of Canada, Ltd., died in Vancouver on May 5, following a brief illness. Mr. Stephenson was manager of the Montreal branch of the company before going to British Columbia and prior to that was manager of the Maritime Provinces division in St. John, N. B.

L. H. GILMER PURCHASES KABLE KORD BELTING, INC.

The L. H. Gilmer Company, Philadelphia, Pa., recently purchased the entire stock and assets of Kable Kord Belting, Inc., Chicago, Ill., formerly known as the Panama Rubber Company, Inc. All fixtures and machinery of the Chicago firm, which manufactured flat roll and Vee belting, have been shipped to Philadelphia, where the Gilmer activities are concentrated.

Hereafter all rubber belts, formerly known under the trade mark of "Kable Kord," will be sold under the name of "Gilmer Kable Kord." By acquisition of this organization, the Gilmer company can supply either flat rubber or V-shape rubber molded belts as well as a complete line of fabric belts.

Kable Kord Belting, Inc., maintained a factory at 2354 Lincoln Avenue, Chicago, Ill. C. J. M. Kelsey was president of the company.

SEIBERLING STOCKS UP; REST OF MARKET DOWN

With the stock markets of the country receding to the lowest levels in years, the securities of the majority of rubber companies followed to new low levels. The one exception was Seiberling Rubber, the common and preferred shares of which advanced to new highs in the face of the declining market. Reports of good earnings for April and increased business for May and future months sent Seiberling common to a new peak of 10½ while the preferred shares rose 10 points to a new high at 50. There were no sales of the latter in the closing days, but the asking price was for a while as high as 70.

New low levels were touched during the fortnight by Firestone common, Goodrich preferred, Fisk preferred, Intercontinental, Lee, Mohawk preferred and Pirelli. While U. S. declined after the report of its loss for the first quarter, it did not reach its previous low. Goodyear and Goodrich also kept above their lows for the year despite bear pressure. Closing stock prices, compared with the close on May 5 and with the high and low for the year, follow:

	Last Price		—1931—	
	May 20	May 5	High	Low
Aetna	—	—	5	3⅜
Ajax	—	—	½	¼
American Hard Rubber	—	—	35¼	30
Dayton "A"	—	—	—	—
Falls	—	—	—	—
Faultless	—	—	37	35
Firestone	16	—	19¾	13
do. 6% pfd.	—	—	63	56½
Fisk	½	½	⅞	½
do. 1st pfd.	1	—	3	1
General	25	—	140	81
do. pfd.	—	—	87½	83
Goodrich	11	11⅞	20⅞	9
do. pfd.	36	—	68	35
Goodyear	37¼	40	52¾	32½
do. 1st pfd.	78¼	79	91	72
India	—	—	13½	8⅝
Intercontinental	2	—	4½	1⅜
Kelly-Springfield	1⅞	2	3½	1⅜
do. 6% pfd.	—	—	45	35
Lee	3	—	4¾	2¼
Mohawk	—	6	8	3
do. pfd.	—	—	35	25
Norwalk	—	—	1½	½
Pirelli	31½	32⅝	39¾	31
Raybestos-Manhattan	21½	23	29½	18⅝
Seiberling	8½	7⅝	10½	4⅝
do. pfd.	—	—	50	32
U. S. Rubber	12⅝	14⅝	20⅝	11⅜
do. pfd.	22½	26½	36⅛	20⅜

Names in the News

P. W. LITCHFIELD, president of the Goodyear Tire & Rubber Company, spoke on May 11 before a meeting of the Akron Ministerial Association on "The Sense of Social Responsibility in Modern Industry." He discussed the current problem of unemployment.

A. M. PHELAN has been appointed representative of the Swan Rubber Company, Bucyrus, O., for its line of portable sprinkling systems, rubber hose and tires for juvenile vehicles in the metropolitan district of New York State. He will have headquarters at 416 Broadway, New York City.

A. J. MUSSELMAN, inventor of the Airwheel, or "doughnut" airplane tire, of the Goodyear Tire & Rubber Company, visited his home town, Wichita, Kan., this month after a 27-year absence. During his stay he was entertained by the local chamber of commerce and aeronautic association.

HARVEY S. FIRESTONE, SR., president of the Firestone Tire & Rubber Company, and his son, HARVEY S. FIRESTONE, JR., stopped at Amarillo, Tex., recently, enroute to California. They motored 50 miles north to Borger, Tex., where they made a complete inspection of the J. M. Huber Company's carbon black factory. Both expressed keen interest in the efficient plant design and control of the manufacture of this important rubber pigment. Following a detailed inspection of the carbon black operations, the Firestones were taken out to the gas fields where one of the Huber wells, producing 40,000,000 cubic feet of natural gas per day, was opened wide for the benefit of the visitors.

PROFESSOR F. E. LLOYD, Macdonald professor of botany at McGill University, gave a radio address last month on "India Rubber and Where It Comes From" over station CKAC, Montreal, Que. The talk was presented under the auspices of the National Council of Education of Canada.

C. C. DAILY, chemist of the C. P. Hall Company, spoke before a luncheon meeting of the Lions Club of Cuyahoga Falls, O., on May 6, on the subject of "Rubber."

C. L. MOODY has been appointed as factory manager of the main plant of the United States Rubber Company tire department in Detroit, Mich., succeeding EARL L. BRYANT, who will devote his entire time to special work in the co-ordination of tire factory operations. Before assuming his present position, Mr. Moody was manager of the Kitchener, Ont., factory of the Dominion Rubber Company, Canadian subsidiary of the United States Rubber Company. Prior to joining the U. S. organization, he was general superintendent of the Fisk Rubber Company plant at Chicopee Falls, Mass.

CLIFFORD C. JOHNSTON JOINS FENNER & BEANE

Fenner & Beane, clearing members of the Rubber Exchange of New York, Inc., and members of the New York Stock Exchange and other principal exchanges, announce the association of Clifford C. Johnston, member of the Rubber Exchange of New York, Inc., as rubber consultant, effective immediately.

Mr. Johnston, a Cornell graduate, is well known to the rubber trade in New York and abroad and brings to his new association more than twelve years of experience in the crude rubber business. For four and a half years he was the managing partner in Dupire Brothers Rubber Department, Singapore, Straits Settlements, where he managed ten extensive rubber estates and engaged in the sale of crude rubber.

For the last eight years Mr. Johnston has been head of the Johnston Rubber Company, 133 Front Street, New York, representing important foreign rubber producing interests. In the United States, Mr. Johnston is exclusive selling agent for the Nomura rubber interests, which maintain a chain of rubber refineries in Dutch Borneo, and for Societé Colonial Anversoise, of Antwerp. Among other estates whose rubber has been introduced to this market by Mr. Johnston is the Danau Salak Estate, Dutch Borneo.

E. R. LAWLER has resigned his post as general chairman of the Rubber Section of the National Safety Council due to the closing of the Woonsocket Rubber Company, Woonsocket, R. I., with which he was associated. C. L. HUNGERFORD, of the Firestone Tire & Rubber Company, formerly vice-chairman, has succeeded to the position of general chairman of the group.

A. SCHLEICHER, president of the Samson Tire & Rubber Company, presided at a luncheon of the Los Angeles Chamber of Commerce tendered to HARVEY S. FIRESTONE, president of the Firestone Tire & Rubber Company, and his son, HARVEY S. FIRESTONE, JR., on May 6. Mr. Schleicher is first vice-president of the Los Angeles Chamber of Commerce.

G. ALVIN WILLIAMS has been elected first vice-president of the United Carbon Company and a member of the executive committee. He has been succeeded as secretary of the company by CARL H. MCHENRY.

HARRY A. ASTLETT, of H. A. Astlett & Company, and CLINTON T. REVERE, of Munds & Winslow, have been elected governors of the Rubber Exchange of New York, Inc. They succeed to the unexpired terms of HUTCHESON PAGE and JEROME LEWINE, both resigned.

W. B. WIEGAND, of the Binney & Smith Company, New York City, sailed from New York City on May 21 to visit Europe and England. He will attend the International Congress of Rubber Technologists to be held from June 10 to 13 in the Grand Salle des Conferences at the Maison des Centraux, 8 Rue Jean Goujon, Paris, and will present a paper on "Volatile Matter in Carbon Black." He will also exhibit selections from the Binney & Smith film on "The Story of Carbon Black" at the various rubber centres on the Continent and in England which he visits. He is expected to return to New York in about six weeks.

ROYAL E. DAVIS, of the commercial research department of the Goodyear Tire & Rubber Company, addressed the members of the Cleveland Chapter of the American Statistical Association at a dinner meeting on May 14. Mr. Davis also spoke on the current improvement in business before the Men's Club of the Y. M. C. A. at Massillon, O., on May 4.

C. W. BEDFORD, manager of the compounding department of the B. F. Goodrich Company tire division, addressed a group of 26 officers of the United States Army Quartermasters' Transport School, Camp Holabird, Md., who visited the Goodrich Akron factories on May 8. E. C. STONER, Goodrich tire division production engineer, talked to a group of 75 enlisted men who participated in the visit.

CHARLES H. ROTH, last member of the original aeronautic department of the Goodyear Tire & Rubber Company, has resigned to devote his time to the Roth Finance Company, which he organized three years ago. Mr. Roth joined the Goodyear aeronautics department when it was first organized 17 years ago and achieved a wide reputation as a free balloonist.

P. J. KELLY, advertising manager of the B. F. Goodrich Company, spoke on the need for greater care against industrial accidents before an industrial safety rally held at the Akron armory under the auspices of the Akron Chamber of Commerce on May 6. Immediately after the talk, Mr. Kelly went to Akron City Hospital for a minor tonsil operation, from which he quickly recuperated.

DR. W. N. JONES, superintendent of the processing division of the B. F. Goodrich Company, spoke on May 14 before the Cleveland Section of the American Chemical Society at Carnegie Hall, Cleveland, O.

F. D. CHITTENDEN, of the United States Rubber Company, has been elected to honorary membership in the Draper Chemical Society of New York University in appreciation of a lecture he delivered before the society on April 10 on "The Chemistry of Rubber."

Rubber News Around the World

DUNLOP RUBBER COMPANY HOLDS TRADE POSITION

Despite its lower profit for 1930, the Dunlop Rubber Company, Ltd., has fully maintained its standing in the British market and successfully retained its full competitive position throughout the world, according to the report of Sir Eric Geddes, chairman, at the annual meeting. The German, American, Canadian and Australian subsidiaries were adversely affected by economic conditions in those countries, but the French company achieved a record in sales both in quantity and value.

The company's plantations were said to be currently producing rubber at the lowest costs ever attained, while the amount of rubber produced per acre is at a new high record. The average f. o. b. cost in 1930 was 4.49d per pound, while in 1931 the estimated cost will be slightly over 3d per pound, without any relaxation of upkeep of the plantations. The net profit of Dunlop Plantations, Ltd., for the year ended October 31, 1930, was £114,291 as against £306,954 reported as the total for the previous year.

The complete financial statement for the year ended December 31, 1930, shows that the Dunlop Rubber Company, Ltd., had a net profit of £441,394, or approximately $2,147,380, after depreciation, interest, preference dividends of subsidiaries and reserve for taxation, equivalent after dividends on the 6½ per cent preference A shares, 7 per cent on the preference B shares and 10 per cent on preference C shares, to 1.91 per cent on £7,851,045 ordinary stock. This compares with net profit in 1929 of £1,350,824, or about $6,571,750, after taxes, but before general reserve, equal to 13.44 per cent on the ordinary stock.

Sorbo Products Exhibit

Sorbo Sponge-Rubber Products, Ltd., has established an exhibition of its products at Bush House, London. Among the sponge rubber items displayed are mattresses, floor coverings, baby carriage tires, balls, and upholstery. The exhibition was opened by H. Eric Miller, chairman of Harrisons & Crosfield, Ltd., who praised the pioneering spirit of the Sorbo company, which now has factories at Woking on a site of over 70 acres.

Dewey & Almy British Branch

Dewey & Almy, Ltd., is a newly formed subsidiary of the Dewey & Almy Chemical Company, Cambridge, Mass., organized to manufacture and sell the products of that organization in England and Europe. Among the products which will be introduced to the British and European markets are the company's latex cement for the shoe industry, its Multibestos latex bonded brake lining and Darex, its latex-felt insulating soling material.

CANADIAN GOODRICH HAD LOSS OF $673,745 IN 1930

The Canadian Goodrich Company, Ltd., reports a trading loss for the year 1930 of $286,737, to which were added various charges, making a total loss of $673,745. Net sales for the year were $3,698,260, compared to $4,600,577 in 1929.

The balance sheet shows current assets of $1,807,591, including inventories of $1,311,593. Fixed assets are carried at $2,285,896 and current liabilities total $568,140. Working capital totals $1,239,451. A balance of $1,221,017 was brought forward into the current year.

MOSCOW RUBBER FACTORY FULFILLS 5-YEAR PLAN

The Moscow factory "Kauchuk," manufacturing rubber footwear, fulfilled its Five-Year Plan by April 1, or within two and a half years. Its output between April 1, 1930, and April, 1, 1931, was 42,923,000 pairs as compared with 42,268,000 pairs as set in the plan.

The reduction in production costs, as compared with 1927-28, was 30.6 per cent, whereas the plan called for a lowering of only 22.6 per cent during the first three years of the Five-Year Plan period. Capital construction costs were also reduced by 10 per cent below the amount called for in the plan.

Dominion Rubber Meeting

The annual general meeting of the shareholders of the Dominion Rubber Company, Ltd., was held at Montreal, Que., on April 28 and was routine in character, the directors being re-elected without change. Answering a stockholder, W. A. Eden, president, said that the depreciation account at the end of March amounted to $5,000,000, or, roughly, one-third of the gross value of the fixed assets.

U. S. Leads in Tire Exports

The United States maintained its lead in exports of automobile casings during the first quarter of 1931. According to estimates compiled by the Department of Commerce, the United States shipped 581,282 casings in the first three months of this year. This compares with exports by the United Kingdom of 235,632 casings, by France of 236,350 casings and by Canada of 224,898 casings.

Continental Profits Lower

Net profits of the Continental Gummiwerke, A. G., for the year ended December 31, 1930, amounted to Rm. 3,640,000, or approximately $880,000. This compared with 1929 earnings of Rm. 4,040,000, or about $975,000. A dividend of 8 per cent was paid on the share capital of Rm. 40,100,000 as compared with 9 per cent for 1929. The report states that total sales decreased by 16 per cent during the year.

French Synthetic Rubber Firm

Under the name of the Societé Francaise du Caoutchouc "B" (Procédés Ballandras), a new French company has been formed with offices at 33 Rue Centrale, Lyons, to promote a process for the production of synthetic rubber. Stock is being sold to the public by the promoters, who include André Ballandras, Jean Marie Marechal, Henri Gauthier and Alex de la Croix Laval.

The business of Wynand & Klatte, rubber brokers, has been taken over by P. Carel Wynand, who will carry it on under his own name at Euterpestraat 60, Amsterdam, Z, Holland.

Closing Prices on Rubber Exchange of New York, Inc.

FROM MAY 5 TO MAY 18, 1931

		Spot	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Sales
No. 1 Standard Contract of 10 Tons															
May	5	6.05	6.09	6.13	6.18	6.25	6.33	6.42	6.51	6.60	6.68	6.75	6.83	6.92	24
	6	6.12	6.10	6.17	6.23	6.31	6.38	6.47	6.55	6.63	6.72	6.81	6.90	6.99	38
	7	6.38	6.35	6.42	6.50	6.56	6.61	6.68	6.76	6.83	6.94	7.02	7.10	7.18	66
	8	6.35	6.35	6.40	6.47	6.55	6.63	6.71	6.79	6.86	6.98	7.02	7.05	7.12	78
	9	6.30	6.25	6.31	6.37	6.45	6.54	6.62	6.69	6.76	6.89	6.90	6.95	7.05	22
	11	6.60	6.60	6.67	6.75	6.82	6.90	6.98	7.06	7.15	7.23	7.28	7.33	7.41	101
	12	6.45	6.44	6.53	6.62	6.69	6.77	6.84	6.90	6.96	7.04	7.10	7.17	7.25	45
	13	6.40	6.31	6.36	6.41	6.50	6.60	6.67	6.73	6.80	6.87	6.93	6.99	7.07	93
	14	6.40	6.35	6.41	6.46	6.55	6.65	6.71	6.78	6.85	6.92	6.99	7.06	7.13	85
	15	6.70	6.65	6.71	6.77	6.86	6.95	7.03	7.10	7.17	7.24	7.30	7.36	7.46	113
	16	6.46	6.53	6.59	6.65	6.73	6.82	6.89	6.96	7.03	7.12	7.20	7.27	7.36	26
	18	6.50	6.50	6.56	6.62	6.70	6.79	6.87	6.95	7.03	7.11	7.18	7.25	7.33	21
Old "A" Contract of 2½ Tons															
May	5	——	6.00	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.67*	6.74*	6.83*	6.91*	9
	6	——	6.00	6.10	6.20	6.30	6.30	6.40	6.50	6.60	6.71*	6.80*	6.90*	6.98*	15
	7	——	6.20	6.30	6.30	6.40	6.40	6.50	6.60	6.70	6.94*	7.02*	7.10*	7.18*	139
	8	——	6.20	6.30	6.40	6.50	6.50	6.60	6.70	6.80	6.97*	7.01*	7.04*	7.11*	88
	9	——	6.20	6.20	6.30	6.30	6.40	6.50	6.60	6.70	6.84*	6.89*	6.94*	7.04*	1
	11	——	6.50	6.60	6.70	6.80	6.90	6.90	7.00	7.10	7.22*	7.27*	7.32*	7.40*	143
	12	——	6.40	6.50	6.50	6.60	6.70	6.80	6.80	6.90	7.03*	7.09*	7.16*	7.24*	29
	13	——	6.20	6.30	6.40	6.40	6.50	6.60	6.70	6.80	6.86*	6.92*	6.99*	7.06*	12
	14	——	6.30	6.40	6.40	6.50	6.50	6.60	6.70	6.80	6.91*	6.98*	7.05*	7.12*	28
	15	——	6.60	6.70	6.70	6.80	6.90	7.00	7.10	7.20	7.23*	7.29*	7.35*	7.42*	28
	16	——	6.40	6.40	6.50	6.60	6.70	6.80	6.90	7.00	7.15*	7.19*	7.26*	7.35*	1
	18	——	6.50	6.50	6.60	6.60	6.70	6.80	6.90	7.00	7.08*	7.15*	7.22*	7.30*	14

*New "A" Contract.

Rubber Goods and Specialties

All-Rubber Slipon Recoil Pad

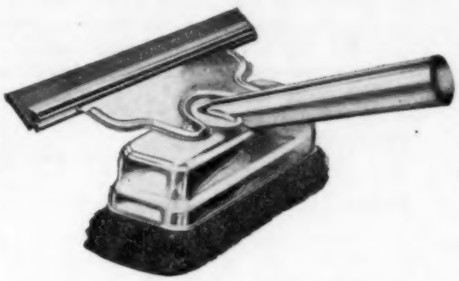
The Jostam Manufacturing Company, 5252 Broadway, Chicago, Ill., has placed on the market for 1931 a new shotgun and rifle recoil pad under the name of the All-Rubber Slipon. This is a molded red rubber pad made in one piece. It slips on the gun stock

and fits snugly. It is made along the same lines as the old time rubber slipon, except that it has an improved molded base which takes up the recoil of the gun. No screws or laces are required in its use. It is made in three sizes to fit all popular types of guns.

Gates Vulco Battery Apron

These aprons, offered by the Gates Rubber Company, Denver, Col., are designed to meet the needs of all workers in battery shops, as well as engravers and lithographers. Made of heavy gum rubber, they will

withstand hard usage and give adequate protection to the clothing from water, grease, acid and abrasion. The tough rubber is built for hard service and will not snag under ordinary conditions. The Gates Vulco apron is made of red rubber and has reinforced eyelets and long rubber strings so that it is ready for immediate wear. Weighing only two pounds, this apron is comfortable to wear and does not pull on the back of the neck.



Master Window Washer

The Master window washer washes, cleans, dries and polishes windows in a single operation, according to the Gordon Manufacturing Company, 110 East 23rd Street, New York City. It combines in one unit a water tank, a washing sponge, drier and polisher. The rubber squeegee is easily removable by use of a simple sliding attachment. The water tank holds enough water to clean more than 30 windows. Water feeds through the rubber sponge which grips the surface and removes all dirt and grime instantly. There are three sizes of squeegees, which are interchangeable. The six-inch squeegee can be used for French windows, the eight-inch for the average window, and the ten-inch size for large store windows. The handle is especially designed to fit the hand and also serves as a socket for a pole used in washing high windows. The device itself is made of non-rust brass in a highly polished nickel finish.

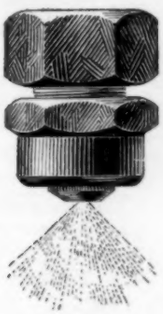
New Goodyear Rim Strip

A new Universal type rim strip for use for drop center or well-base rims on automobiles has been placed on the market by the Goodyear Tire & Rubber Company. Goodyear's new Universal type rim strip is used to protect the tube which fits into the well, against spoke heads which would cut through, causing an inside puncture. The new rim strip is constructed so that the one size strip can be used for either 19 or 21 inch diameter rims, and in a width that will handle all sizes of drop center rims known on the market. At present there are sixteen marks of automobiles using the well-base or drop center type rim.

Goodyear has also just announced several important improvements on it All Weather Tread casing. The center non-skid pattern is now 10 per cent deeper, assuring greater design wear. The shoulder non-skid button is 50 per cent deeper, which also adds to the design wear. The riding ribs and the outer non-skid blocks have the same outside bracing as Goodyear truck tires. The outer non-skid blocks are handsomely prismed into the sidewalls, creating an unusual style element. The cross sections are equal to heavy duty measurements in all sizes.

Hard Rubber Spray Nozzles

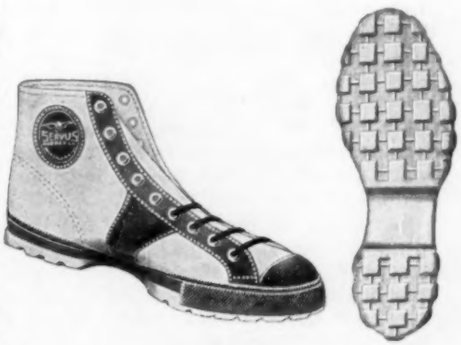
The Monarch Manufacturing Works, Inc., 2730 East Westmoreland Street, Philadelphia, Pa., is now offering Monarch Perfection hard rubber spray nozzles. These nozzles have renewable tips and are, therefore, easy for cleaning or changing capacity.



When the tip or disc of a Monarch hard rubber atomizing spray nozzle is worn, it may be replaced with a new one at small cost, as the body and cap will usually last indefinitely. Should conditions change, tips of smaller or larger capacity may be used. This nozzle is absolutely positive in operation, according to the manufacturer, no adjustment being needed. Seventeen sizes are offered.

Ser-Square Sport Shoe

One of the best selling items in the sport shoe line of the Servus Rubber Company, Rock Island, Ill., is the Ser-Square model. This is featured by a tan colored heavy sole



with an entirely new square-cut design which affords excellent traction. The shoe is made with white, brown or suntan duck upper, black saddle strap, lace-stay, backstay, toe cap, toe guard and dual foxing. Other details include a knurled toe guard to resist wear of toe dragging and to give toes protection. The Ser-Square is furnished in sizes for men, boys, and women.

MOTOR-EQUIPMENT ASSN. WILL FORM TWO GROUPS

The board of directors of the Motor and Equipment Association at its meeting in Detroit on May 1 and 2 unanimously approved changes in the by-laws of the Motor and Equipment Association which create a federated association composed of separate, self-governing but co-operating manufacturers' and jobbers' associations. A letter outlining the proposed change has just been mailed to the membership by President E. T. Satchell and a speedy ratification is expected.

Details of the federation will be worked out at an early date by committees and by Councillors of the present Divisions "A," "B" and "C" for final approval of the membership.

The plan broadly will create a Federated Motor and Equipment Association, a Motor and Equipment Manufacturers Association, and a Motor and Equipment Wholesalers Association. Both of the latter will be members of the Federated Motor and Equipment Association. Several rubber manufacturing companies, now members of the Motor and Equipment Association, will become associated with the manufacturers' group.

Each association will conduct its own activities, have a definite money reserve resulting from an allocation of the present surplus, its own officers, board of directors, and paid personnel. The Federation will be responsible for work national in scope and of mutual interest to the member associations.

2,000 WORKERS WALK OUT AT MISHAWAKA RUBBER

Picket lines were drawn around the factories of the Mishawaka Rubber & Woolen Manufacturing Company, Mishawaka, Ind., on May 18 as 2,000 workmen maintained a strike in sympathy with two men who were dismissed from the plant on May 14. Forty employes walked out of the factory on May 14, and the others joined the strike on May 18.

Another point of contention is a bonus system established by the factory management which workers have declared to be unfair and discriminatory.

In addition to manufacturing a full line of rubber shoes of all types, the Mishawaka Rubber & Woolen Manufacturing Company produces certain types of leather work shoes and heavy woolen socks. Woolen slippers and footwear are also made at the Mishawaka plant.

Rubber Export Ass'n Operations

The operations of the Rubber Export Association, which is functioning under the Webb Law, will be the subject of a paper by Charles E. Guest, vice-president and general manager of the United States Rubber Export Company, Ltd., to be given at the Eighteenth National Foreign Trade Convention, to be held at New York City, May 27-29. The paper will be one of a series describing the operations of associations formed under the Webb Act.

Akron Reclaiming Plant Busy

Business of the Akron Rubber Reclaiming Company has shown marked improvement in the past two months. The company's St. Louis plant operating 24 hours a day worked 28 of the 30 days in April, and shipments at both the St. Louis and Akron plants in March were said to be the largest in the company's records. April business practically equaled that of March.

"TIRE TOPICS" SOLD BY M'ALEENAN CORPORATION

Tire and Auto Accessory Topics, the trade journal for tire dealers which began publication in 1928, has been sold by the McAleenan Publishing Corporation to Federated Business Publications, Inc., which is the publisher of *Tires,* the oldest trade journal in its field, according to a recent announcement by Harvey Willson, president and general manager of the *Tire Topics* firm.

In the transaction the publishers of *Tires* acquired the name, goodwill, and circulation list of *Tire Topics* but none of its personnel is included. Harvey Willson, who was assistant general manager of the Rubber Manufacturers Association for eight years, expects to resume association management in another industry.

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LATE MARKET PRICES

RUBBER—COTTONS AND FABRICS—CHEMICALS

NEW YORK, MAY 20, 1931

RUBBER

Crude

CRUDE rubber this month has seen a bullish market for the first time in a long period. Futures on the Rubber Exchange of New York have advanced a cent a pound in price, and the market for actuals has gained nearly that much in the first three weeks of May. Negotiations for restriction and the increasing consumption and lowered production are the chief causes for the rise in quotations for the commodity.

Dutch rubber growers and representatives of the government held meetings at The Hague on May 20, 21 and 22 for the purpose of working out a rough scheme for the improvement of the rubber industry in the Dutch East Indies. The plan is in the hands of a subcommittee and must prove acceptable to the Dutch East Indian government. As some members are due to sail for the United States this week in connection with tariff questions bearing on Sumatra tobacco, the scheme should be ready in a few days. No intimation of its nature has as yet been divulged, and it is not known whether the co-operation of British growers will be asked.

Prices quoted on the New York outside market at the close on May 20 were as follows:

Plantations—

Ribbed Smoked Sheets—		
Spot-May	.06⅝@	.06¾
June	.06⅝@	.06¾
July-Sept.	.06⅞@	.07
First Latex, crepe spot	.06¾@	.06⅞
Amber Crepe, No. 2	.06½@	.06⅝
Amber Crepe, No. 3	.06⅜@	.06½
Amber Crepe, No. 4	.06⅛@	.06⅜
Brown Crepe, Clean thin	— @	.05⅞
Brown Crepe, specky	.05⅞@	.06
Liquid Latex, per gal.	.75 @	.85

Paras—

Up-river, fine	.08⅝@	.08⅝
Up-river Medium	Nominal	
Up river Coarse	.04½@	.06½
Acre Bolivian, fine	.08⅝@	.08⅞
Caucho Ball, Upper	.04½@	.06½
Islands, fine	Nominal	

Centrals—

Central scrap	.06 @	—
Esmeraldas	.06 @	—

Balata—

Block, Colombia	Nominal	
Block, Ciudad	.31 @	.31½

LONDON MARKET

Standard Ribbed Smoked Sheets—Buyers

Spot-May	— @	3⅛d
June	— @	3⅛d
July-Sept.	3¼@	—

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—Sellers

Spot	— @	3d

Scrap

The increase of rubber factory production schedules and the advance in the price for crude rubber have to some extent brightened the prospect for dealers in scrap rubber. Demand from reclaiming plants has been gaining noticeably, although collections continue to be rather difficult. Current quotations for the various grades follow:

(Prices to Consumer)

Auto tire peelings	ton	20.00	@21.50
Mixed auto	ton	9.50	@10.50
Bicycle tires	ton	7.00	@ 8.00
Clean solid truck tires	ton	26.50	@27.00
Boots and shoes	cwt.	1.10	@ 1.20
Arctics, untrimmed	cwt.	.75	@ .80
Inner tubes, No. 1	lb.	.04¼@	.04½
Inner tubes, No. 2, compounded	lb.	.02⅛@	.02¼
Inner Tubes, Red	lb.	.01⅞@	.02
Air Brake Hose	ton	9.00	@10.00
Rubber Hose	ton	8.50	@ 9.00

Reclaimed

Demand for reclaimed rubber continued to be comparatively high during the month, and reclaiming plants consequently operated on higher schedules of output. Sales to rubber manufacturing plants have held up well, with a slightly increasing proportion of reclaim as compared to crude being used. Late prices for the different grades of reclaimed rubber follow:

High Tensile			
Super-Reclaim Black	lb.	.06¾@	.07
High Tensile Red	lb.	.06½@	.06¾
Shoe			
Unwashed	lb.	.05¾@	.06
Washed	lb.	.07½@	.07⅝
Tube			
No. 1 (Floating)	lb.	.08 @	.08⅛
No. 2 (Compounded)	lb.	.06¾@	.07
Tires			
Black	lb.	.05¼@	.05½
Black, selected tires	lb.	.05½@	.05⅝
Dark Gray	lb.	.06¾@	.07
Light Gray	lb.	.07 @	.07⅛
White	lb.	.07⅛@	.07¾
Truck, Heavy Gravity	lb.	.06 @	.06⅛
Truck, Light Gravity	lb.	.06¼@	.06⅜
Miscellaneous			
Mechanical blends	lb.	.04½@	.05

COTTON and FABRICS

Cotton

CONTRARY to the course of crude rubber, raw cotton has declined to lower levels in the course of the past fortnight. The spot price for middling uplands at New York sank to a new low at 9.10 cents a pound on May 19 and closed on the following day at 9.30 cents.

Temperatures throughout the south have been unseasonably low, and in some parts of the belt crop preparations and progress have been retarded by frequent rains, though the last week of the period has shown better weather conditions. There is still in prospect the carryover at the end of July, which should total between 8,000,000 and 9,000,000 bales, and this will overshadow any bullish factors for some time.

The high, low and closing prices for the commodity on the New York Cotton Exchange on May 20 were as follows:

	High	Low May 20	Close	Close May 5
May	9.14	8.92	9.14	9.58
July	9.32	9.10	9.30	9.81
Oct.	9.66	9.44	9.62	10.18

Tire Fabrics

There has been some improvement in activity in the tire fabrics market at the lower price levels created as a result of the decline in raw cotton. The demand for the popular grades has been increasing and is now more nearly in proportion to the higher rate of tire factory operating schedules. Late price quotations for the different grades of tire fabrics were as follows:

(Prices Net at the Mill)

CORD			
Peeler, carded, 23/4/3	lb.	.27½@	.28
Peeler, carded, 23/5/3	lb.	.26½@	.27
Peeler, carded, 13/3/3	lb.	.24 @	.24½
Peeler, carded, 15/3/3	lb.	.24½@	.25
Egyptian, carded, 23/5/3	lb.	.37 @	.38
Egyptian, combed, 23/5/3	lb.	.40½@	.41
CHAFERS			
Carded, American, 8 oz.	lb.	.23½@	.24
Carded, American, 10 oz.	lb.	.23½@	.24
Carded, American 12 oz.	lb.	.23 @	.23½
Carded, American, 14 oz.	lb.	.21 @	.21½
LENO BREAKER			
Carded, American, 8¼ oz.	lb.	.22 @	.26
Carded, American, 10¼ oz.	lb.	.22 @	.26
SQUARE WOVEN			
Carded, American, 17¼ oz. 23-11 ply	lb.	.27½@	.28
Carded, American, 17¼ oz. 10-ply	lb.	21 @	.21½

Sheetings

The sheetings market has continued its steady price decline, most grades being fractionally lower at the close of the fortnight. The current price quotations for the more popular sizes are as follows:

40-inch, 2.50-yard	yd.	.06⅞@	.07
40-inch, 2.85-yard	yd.	— @	.06
40-inch, 3.15-yard	yd.	.07⅛@	.07⅛
40-inch, 3.60-yard	yd.	— @	.06
40-inch, 3.75-yard	yd.	.04⅞@	.05
40-inch, 4.25-yard	yd.	— @	.04⅝

Ducks

Enameling ducks were somewhat weaker in price at the end of the fortnight, but the other grades held steadily. There has been a slight quickening of activity throughout the market, but not equal to the demand of previous years. The latest quotations for the grades most used in the rubber industry follow:

Belting and Hose	lb.	.22½@	.24
Enameling	lb.	.20 @	.21
Single filling	lb.	— @	.10
Double filling	lb.	.11 @	.11⅝

CHEMICALS

RUBBER factories have continued to operate at increased schedules of production and have, therefore, caused a gain in the consumption of and demand for rubber chemicals and compounding ingredients of all types. The use of carbon black during April and May is believed to have exceeded production for the first time in many months, resulting in a slight reduction in the heavy stocks of that compounding ingredient. No important changes in price have occurred during the fortnight.

ACCELERATORS

Organic				
A-1	lb.	.24	@	.27
A-5-10	lb.	.33	@	.36
A-7	lb.	.55	@	.59
A-11	lb.	.62	@	.66
A-16	lb.	.57	@	.61
A-19	lb.	.58	@	.62
A-20	lb.	.64	@	.68
A-32	lb.	.80	@	.95
Aldehyde ammonia, crystals	lb.	.65	@	.70
Aniline oil, drums, f.o.b. works	lb.	.14½	@	.16
Captax	lb			
Cryiene	lb.	.55	@	.65
paste	lb.	.45	@	.55
Di-Ortho-Tolyguanidine	lb.	.42	@	.44½
Diphenylguanidine	lb.	.30	@	.32½
Ethylidene aniline	lb.	.45	@	.47½
Formaldehyde aniline	lb.	.37½	@	.40
Heptene	lb.	.40	@	—
Hexamethylene-tetramine	lb.	.58½	@	.61
Lithex	lb.	.18	@	.20
Methylenedianiline	lb.	.37½	@	.40
Monex	lb.	3.25	@	—
Oxynone	lb.	.68	@	.80
Phenex	lb.	.75	@	—
Pipsol	lb.	4.30	@	4.50
R & H 40	lb.	.40	@	.42½
R & H 50	lb.	.40	@	.42½
R & H 397	lb.	.75	@	.77½
R-2	lb.	1.95	@	2.15
Safex	lb.	1.20	@	1.25
SPDX	lb.	.75	@	—
Super-Sulphur No. 1	lb.			
No. 2	lb.			
Tensilac, No. 39	lb.	.40	@	.42½
Tensilac, No. 41	lb.	.50	@	.52½
Thermio F	lb.	.50	@	.55
Thiocarbanilid, drums	lb.	.21	@	.23
TMTT	lb.	3.00	@	3.25
Trimene	lb.	.75	@	—
base	lb.	1.20	@	—
Triphenylguanidine	lb.	.58	@	.60
Tuads	lb.			
Ureka	lb.	.75	@	1.00
Vulcanex	lb.			
Vulcone	lb.			
Vulcanol	lb.			
Z-88-P	lb.	.50	@	.60
Zimate	lb.			
Inorganic				
Lead, sublimed blue	lb.	.08¼	@	—
Lead, white	lb.	.08½	@	.08¾
Litharge, domestic	lb.	.07¾	@	—
Magnesia, calcined, light	per 100 lb.	5.35	@	5.45
heavy	per 100 lb.	3.65	@	3.75

COLORS

Blacks (See Compounding Materials)				
Blues				
Prussian	lb.	.35	@	.36
Ultramarine	lb.	.06	@	.32
Browns				
Sienna, Italian	lb.	.05½	@	.12½
Umber, Turkey	lb.	.04½	@	.07
Greens				
Chrome, light	lb.	.30	@	.32
medium	lb.	.31	@	.33
dark	lb.	.34	@	.36
Chromium Oxide, bbl.	lb.	.34½	@	.35½
Reds				
Antimony crimson, 15/17	lb.	.40	@	.44
sulfur, free	lb.	.56	@	.66
golden, 15/17 F.S.	lb.	.20	@	.25
Indian English	lb.	.08	@	.11
Domestic (Maroon)	lb.	.11	@	—
Oximony	lb.	.13¼	@	—
Red oxide, pure	lb.	.10	@	.12
Smith's 444 Crimson f.o.b. Springfield	lb.	.08¾	@	.10
Rub-Er-Red, f.o.b. Easton	lb.	.08¾	@	—
Venetian red	lb.	.08	@	.06
Vermillion, quicksilver, English	lb.	1.75	@	1.80
Whites				
Lithopone, Akcolith	lb.	.05 2/5	@	.06
Lithopone, Albalith	lb.	.05¼	@	.05¾
Lithopone, Azolith	lb.	.05¼	@	.05¾
Lithopone, Vanolith	lb.	.05¾	@	—
Titanium oxide	lb.	.21	@	—
Titanox B, f.o.b. St. Louis,	lb.	.06½	@	.07
Titanox C, f.o.b. St. Louis,	lb.	.07	@	.07½
Zinc Oxide—American Process				
American Azo:				
ZZZ (lead free)	lb.	.06½	@	.07
ZZ (leaded)	lb.	.06⅜	@	.06⅞
Horsehead Brand:				
Special	lb.	.07	@	.07½
XX Green	lb.	.07	@	.07½
XX Red, lead free	lb.	.06½	@	.07
Kadox, black label	lb.	.10⅜	@	.10⅞
blue label	lb.	.09⅜	@	.09⅞
red label	lb.	.08	@	.08½
St. Joe, black label	lb.	.06½	@	.07
red label	lb.	.06½	@	.07
Zinc Oxide—French Process				
Anaconda, lead free	lb.	.06½	@	.07
Anaconda, selected lead free	lb.	.07	@	.07½
White seal	lb.	.11⅝	@	.11⅞
Green seal	lb.	.10¾	@	.10⅞
Red seal	lb.	.09⅝	@	.09⅞
Yellows				
Chrome	lb.	.16½	@	.17
Ocher, French medium	lb.	.02	@	.03
domestic	lb.	.01⅝	@	.02

COMPOUNDING MATERIALS

Aluminum Flake	ton	21.85	@	24.50
Ammonia carbonate, lump	lb.	.10½	@	.12
Asbestine	ton	14.75	@	18.00
Barium carbonate	lb.	.03½	@	.05
Barium Dust	lb.	.05	@	.06
Barytes southern off-color	ton	12.00	@	18.00
Western prime white	ton	23.00	@	—
imported	ton	27.00	@	36.00
Basofor	lb.	.04½	@	—
Bentonite	lb.	.02	@	.03
Blacks				
Arrow "Aerofloted"	lb.	.03½	@	.08½
Bone Black	lb.	.06	@	.12½
Carbon, compressed	lb.	.03	@	.07
Carbon, uncompressed	lb.	.03	@	.07
Disperso, f.o.b. Louisiana	lb.	.03½	@	—
Disperso, f.o.b. Texas	lb.	.036	@	—
Drop Black	lb.	.06	@	.14
Fumonex	lb.	.03½	@	.07½
Excello, compressed	lb.	.04	@	.08
Gastex, f.o.b. Texas	lb.	.03	@	.06
Lamp Black	lb.	.10	@	.40
Micronex	lb.	.03½	@	.08½
Thermatomic-Thermax	lb.			
Flex	lb.			
P-33	lb.			
United carbon, fob Tex.	lb.	.03½	@	.08½
Velvetex carbon	lb.	.03	@	.06
Blanc fixe dry f.o.b. works	ton	75.00	@	90.00
Carrara filler	lb.	.01¾	@	.02
Catalpo (fact.)	lb.	.02	@	—
Clay, Kaolin, domestic	ton	8.00	@	9.00
Aerfloted, Suprex	ton	8.00	@	20.00
Colloidal	lb.	.05	@	.08
Congaree, c. l. f.o.b. mine	ton	9.00	@	—
Dark Blue Ridge	ton			
Dixie	ton			
Langford	ton			
Lexington	ton	10.00	@	22.00
Mineral Flour, c.l. f.o.b. mine	ton	20.00	@	23.00
Par	ton			
Tensulite	ton	15.00	@	—
Glues, extra white	lb.	.25	@	.26
medium white	lb.	.22	@	.24
Magnesia, carbonate	lb.	.08¾	@	.11
Mica, white water grnd.	lb.	.06	@	.08
Off color (biotite)	lb.	.05	@	.07
Rotten Stone (powdered)	lb.	.02	@	.05
Soapstone, powdered	ton	15.00	@	22.00
Starch, powdered	cwt.	—	@	2.92
Talc, domestic	ton	12.00	@	15.00
Pyrax A	ton			
Whiting, commercial	cwt.	—	@	1.00
English cliffstone	cwt.	1.75	@	2.00
Quaker	ton			
Superfine	ton	10.00	@	12.00
Sussex	ton			
Witco	ton	20.00	@	—
Zinc Carbonate	lb.	.09½	@	.10½
Zinc Stearate	lb.	.19	@	.22

MINERAL RUBBER

Genasco (factory)	ton	50.00	@	52.00
Granulated M. R.	ton			
Hard Hydrocarbon	ton			
Paradura	ton	62.50	@	65.00
Parmr, solid	ton	28.00	@	48.00
Pioneer. MR, solid	ton	40.00	@	42.00
Pioneer-granulated	ton	50.00	@	52.00
R & H Hydro-Carbon	ton	27.05	@	29.00
Robertson, MR, solid	ton	34.00	@	80.00
M.R. (gran)	ton	38.00	@	80.00

SOFTENERS

Acids				
Nitric, 36 degrees	cwt.	5.00	@	5.25
Sulfuric, 66 degrees	cwt.	1.60	@	1.95
Tartaric, crystals	lb.	—	@	.31½
Acids, Fatty				
Laurex	lb.	.15	@	.16
Stearex	lb.	.13	@	.17
Stearic, double pressed	lb.	.17	@	.22
Alkalies				
Caustic soda, 76%	cwt.	2.90	@	—
Soda ash, 58% C.L.	cwt.	1.17½	@	—
Oils				
Corn, refined, bbls.	lb.	.08¾	@	.10½
Cottonseed, crude		.06⅞	@	.07
Cycline	gal.	.27	@	.34
Degras (c.l. 100 bbls.)	lb.	.03¾	@	—
Less c.l. (10-25 bbls.)	lb.	.04	@	—
Lots less than 10 bbls.	lb.	.04¼	@	.04½
Fluxrite	lb.	.05½	@	.06½
Palm Lagos	lb.	.05	@	.06
Niger	lb.	.04½	@	.05¼
Para-Flux	gal.	.17	@	—
Petrolatum, white	lb.	.08	@	.08½
Pigmentaroil	gal.	.18	@	.23
Pine, steam distilled	gal.	.65	@	.70
destructively distilled	gal.	.54	@	.55
Witco Palm Oil	lb.	.11	@	—
Witco Softener (f.o.b. wks.)	lb.	.02	@	—
Resins and Pitches				
Pitch, Burgundy	lb.	.06½	@	.07½
coal tar	gal.	.05½	@	.06
pine, 200 lb. gr. wt.	bbl.	7.00	@	—
Rosin, grade K, 280 lb.	bbl.	—	@	6.35
Pigmentar	gal.	.18	@	.23
Tar Retort, 50 gal.	bbl.	13.50	@	15.00
Solvents				
Acetone, pure	lb.	.10	@	.10½
Alcohol, denatured, No. 1 bbls.	gal.	.27	@	.29
Benzol, 90%	gal.	.20	@	.21
Carbon, biculphide	lb.	.05½	@	.06¼
Carbon, tetrachloride	lb.	.06¼	@	.07
Dryolene (f.o.b. Okla.)	gal.	.10	@	.10½
Gasoline, steel bbls.	gal.	.16	@	—
Naphtha, solvent	gal.	.30	@	.33
Rub-Sol (f.o.b. Okla.)	gal.	.09	@	—
Turpentine, spirits	gal.	.54	@	.56
wood	gal.	.51	@	.61
destructively distilled	gal.	.35	@	—
Waxes				
Beeswax, white	lb.	.34	@	.36
Carnauba	lb.	.26	@	.28
Ceresin, white	lb.	.10	@	.11
Montan, crude	lb.	.06½	@	.07
Ozokerite, black	lb.	.24	@	.25
green	lb.	.26	@	.30
Paraffin (c.l.—f.o.b. N. Y.)				
Yellow crude scale	lb.	.02½	@	—
White crude scale 124/126	lb.	.02½	@	—
Refined, 125/127	lb.	.03¾	@	—
Refined, 128/130	lb.	.03¾	@	—
Refined, 135/137	lb.	.05¼	@	—
Refined, 138/140	lb.	.07¼	@	—

ANTI-OXIDANTS

Agerite, Resin	lb.			
Powder	lb.			
White	lb.			
Albasan	lb.	.70	@	.75
Antox	lb.			
B-L-E	lb.	.57	@	.60
Neozone	lb.			
Oxynone	lb.	.68	@	.80
Resistox	lb.	.54	@	.57
Stabilite	lb.	.57	@	.62
Stabilite Alba	lb.	.70	@	.75
VGB	lb.	.55	@	.66

SPECIALTIES

Sunproof	lb.	.35	@	.37½
Sponge Paste	lb.	—	@	.30
Tonox	lb.	.56	@	.60

SUBSTITUTES

Black	lb.	.08	@	.14
White	lb.	.10	@	.16
Brown	lb.	.08	@	.15

VULCANIZING INGREDIENTS

Sulfur Chloride (drums)	lb.	.03½	@	.04½
Sulfur flour, Ref'n'd, 100% pure (bags)	cwt.	2.40	@	2.75
Commercial (bags	cwt.	1.75	@	2.10
Vandex	lb.			